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U.S. Department of the Interior
Bureau of Land Management
Arizona State Office

Kingman Field Office

November 1998

Proposed
Hualapai Mountains Land Exchange
Final
Environmental Impact Statement/ Plan Amendment

99-006024

Arizona Game and Fish Department, Cooperating Agency

The Bureau of Land Management is responsible for balanced management of public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based on the principles of multiple-use sustained yield, a combination of uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

BLM/AZ/PL-88/004

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Arizona State Office
222 North Central Avenue
Phoenix, AZ 85004-2203

In reply refer to:

2200 (030)

Dear reader:

Thank you for your interest and participation in the evaluation of the proposed Hualapai Mountains land exchange. Enclosed is the final Environmental Impact Statement (FEIS) to provide you with information concerning the lands and resources potentially affected by the proposed exchange. A total of 21 comment letters were received on the draft EIS. I invite you to review this FEIS and provide comments.

Changes have been made to the EIS, based on the comments received, including additional data and making corrections to the draft. The equal appraised value alternative has been added to show the BLM's preferred way of equalizing values for the proposed exchange. Chapter 6 has been added to document the comment letters received on the draft EIS and the BLM's responses.

The 30-day comment period for this final EIS ends on

Comments received during this 30-day period will be considered in preparing the record of decision, which will document which lands would be exchanged, if any, and the rationale for the decision. Send comments to the BLM Kingman Field Office, 2475 Beverly Avenue, Kingman, AZ 86401.

The BLM's planning process includes an opportunity for administrative review via a plan protest to the BLM Director. This plan protest procedure is only applicable to the proposed plan amendment.

The 30-day protest period ends on

The protest must specifically address the proposal to categorize certain parcels as available for disposal (Appendix A, Part 2 of the enclosed final EIS). These parcels were not determined to be disposal lands when the Kingman Resource Management Plan (RMP) was approved in March 1995. Currently, no decision has been made on the overall exchange, so the exchange itself cannot be protested. Only the proposal to amend the Kingman RMP to place parcels (Appendix A, Part 2 of the enclosed final EIS) into the disposal category can be protested.

To protest the proposed plan amendment, file a letter of protest with:

Director, Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator
WO-210/LS-1075
Department of the Interior
Washington, DC 20240

The overnight mail address is:

Director, Bureau of Land Management
Attention: Ms. Brenda Williams, Protests Coordinator (WO-210)
1620 L Street NW, Room 1075
Washington, DC 20036

To expedite consideration, in addition to the original sent by mail or overnight mail, a copy of the protest may be sent by fax to (202) 452-5112 or e-mail to [illegible]@wo.blm.gov.

WO-210 will immediately acknowledge receipt of the protest and fax/e-mail a copy to the appropriate BLM State Director and the assigned field support staff.

Protests filed late or filed with the BLM State Director or district, field or area manager shall be rejected by the BLM Washington Office (WO-210).

At minimum, the letter of protest must contain the following information.

1. The name, mailing address, telephone number and interest of the person filing the protest.

2. A statement of which parcel or parcels (by township, range and section) are being protested.

3. A copy of each document addressing the parcels proposed to be categorized as disposal lands, such as letters sent during the plan amendment process that addresses parcels within the proposed plan amendment.

4. A statement of reasons why the BLM State Director's proposed decision to place the lands in the disposal category is believed to be incorrect. All relevant facts need to be included in the statement of reasons. These facts, reasons and documentation are very important to understand the protest rather than merely expressing disagreement with the proposed decision.

For further assistance, please contact Don McClure, Project Leader, at the BLM Kingman Field Office, (520) 692-4400. Your interest and participation are greatly appreciated.

Sincerely,

John R. Christensen

John R. Christensen
Field Manager

Enclosure (1)
Final Hualapai Mountains Land Exchange and Environmental Impact Statement/Plan Amendment

U.S. Department of the Interior
Bureau of Land Management

Arizona Game and Fish Department,
Cooperating Agency

Final Environmental Impact Statement/ Plan Amendment

for the

Proposed Hualapai Mountains Land Exchange

prepared by
the Bureau of Land Management
Kingman Field Office
Kingman, Arizona

November 1998

Denise P. Meridith
Arizona State Director

Environmental Impact Statement/Plan Amendment

Hualapai Mountain Land Exchange, Mohave County, Arizona
Bureau of Land Management, Kingman Field Office

EIS number:	BLM/AZ/PL/99/004
Lead agency:	U.S. Department of the Interior, Bureau of Land Management
Cooperating agency:	State of Arizona Arizona Game and Fish Department
Abstract:	Mohave County, in northwest Arizona, is approximately nine percent private land. One of the major private landowners, the Santa Fe Pacific Railroad Company, has contracted with Ironhorse Investors, Inc. by its manager, Ben Brooks and Associates, Inc. (hereafter referred to as the proponents) to sell approximately 150,000 acres in the Hualapai Mountains and Dutch Flat areas south and southwest of Kingman, Arizona. The proponents have proposed a land exchange with the Bureau of Land Management (BLM). This environmental impact statement (EIS) documents the analysis of potential impacts of the proposed Hualapai Mountain Land Exchange/Plan Amendment. The proposed action consists of two connected actions: a plan amendment and a land exchange. The plan amendment is necessary because approximately 10,000 acres selected by the proponents were not identified for disposal in the approved Kingman Resource Management Plan (RMP) by township, range and section. Through the land exchange process, the BLM seeks to acquire lands to facilitate long-term natural resource management. The proponents seek to acquire lands to enhance land sales and subsequent development. The BLM's preferred alternative is the equal appraised value.
FEIS review period ends:	
Agency contact:	Don McClure Bureau of Land Management Kingman Field Office 2475 Beverly Avenue Kingman, Arizona 86401 telephone: (520) 692-4400
Manager responsible for preparing this EIS and approving the land exchange:	John R. Christensen Kingman Field Manager Kingman Field Office Kingman, Arizona
Official responsible for authorizing the plan amendment:	Denise P. Meridith State Director Bureau of Land Management Arizona

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Summary

Overview

Mohave County, in northwest Arizona, is approximately nine percent private land. One of the major private landowners, the Santa Fe Pacific Railroad Company, has contracted with Ironhorse Investors, Inc. by its manager, Ben Brooks and Associates, Inc. (hereafter referred to as the proponents) to sell approximately 150,000 acres in the Hualapai Mountains and Dutch Flat areas south and southwest of Kingman, Arizona. The proponents have proposed a land exchange with the Bureau of Land Management (BLM).

This final environmental impact statement (FEIS) documents the analysis of potential impacts of the proposed Hualapai Mountains Land Exchange/Plan Amendment.

The proposed action consists of two connected actions: a plan amendment and a land exchange. The plan amendment is necessary because approximately 10,000 acres selected by the proponents were not identified for disposal in the approved Kingman RMP (1995) by township, range and section. Through the land exchange, the BLM seeks to acquire lands to facilitate long-term natural resource management. The proponents seek to acquire lands to enhance land sales and subsequent development.

The land owned by the proponents is intermingled with public lands managed by the BLM. The BLM land use plan for the area -- the Kingman RMP -- calls for consolidating ownership to facilitate management of natural resources. This land use plan is a long-term planning document for approximately 2.4 million acres of public lands.

Issues

The issues are those of land sales and subsequent rural development including homes, roads, utilities, etc., and management of natural resources for the present and long-term. The sales and development could occur in a dispersed area covering potentially 500 square miles with intermingled public lands, or the sales and development area could be within approximately 200 square miles of blocked private ownership.

The issue of land ownership pattern is just the surface of the story that bears telling. A variety of concerns surrounds the proposed land exchange.

People will be affected by this exchange, as the exchange area contains 10 ranches. There will be an effect on how county services are provided and on how growth will occur in this area. People who use the area for hunting, camping, four-wheel driving and other recreation activities will be affected. Wildlife in the area will be affected by development and the pattern of development. Wildlife issues center on whether habitat will retain continuity and how long-term conservation of endangered species, big game and other animals would be affected.

The decision on whether to exchange land will affect up to 10 ranchers in the area. Concerns range from ranching being a viable business to the effects on cattle numbers and range developments such as wells, corrals, fences, etc.

The effect on services provided by Mohave County, such as fire, law enforcement and education, is of concern. Whether the developer should set up an improvement district or write an area plan is an issue of Mohave County development policies. The developer is within the guidance prescribed by the General Plan for Mohave County (March 1995).

The proposed action and equal appraised value alternatives, in conjunction with other ongoing land exchanges as well as other land development in Mohave County, will affect water resources in the exchange area. Surface runoff, sediment load and groundwater use will increase in the Sacramento and Hualapai valleys at a faster rate than under the no action alternative; this is because blocking up private lands will accelerate residential development as compared to the current checkerboard land pattern. In particular, groundwater use in the Sacramento Valley will increase substantially, primarily as a result of residential development in Dutch Flat and Golden Valley. Watershed condition will remain essentially unchanged on blocked-up public lands because these lands will not undergo residential development.

The results of a sample (20-percent) survey confirmed expectations of low cultural resource potential on the selected/public lands. Nine prehistoric and seven historic properties were identified. Under the proposed action, all 16 properties would be negatively impacted by transferring out of federal ownership. Under the equal appraised value alternative, three historic sites would be negatively impacted by transfer and the other cultural resource properties would be retained by the BLM. Under the no action alternative, all cultural properties would continue to be managed in accordance with federal laws and BLM policies and would remain in federal ownership.

Changes made between the draft and final EIS

The draft EIS stated: "Since the exchange will be done on an equal-value basis, the acreage of offered/private or selected/public lands may change. The value shall be based on market value as determined by appraisals. The actual acreage exchanged will be based on the appraisal and resource information."

In the final EIS, the equal appraised value alternative has been added to present the BLM's preferred method of equalizing values. The record of decision will document what lands are to be exchanged, if any, and the rationale for the decision.

In addition, a description of floodplains has been added (Chapter 3) and the effects on the floodplains due to the exchange have been explained (Chapter 4).

The results of the ranching study completed by the University of Arizona (UofA) are in Chapter 4.

Conclusions

Natural resource management would be accomplished under either a consolidated or dispersed ownership pattern. What would change are the issues to be resolved in the future.

In a checkerboard ownership pattern, the natural resource issues would be, for example, wildlife movement over a dispersed area, resolving trespass situations, working on fire suppression strategies, processing rights-of-ways for roads, utilities, etc. Consolidated development would involve such issues as wildlife habitat enhancements and studies, resolving trespass situations, working on a prescribed fire program and processing fewer rights-of-ways, for example. The point is that natural resource management in a checkerboard ownership pattern is based on a reaction to a proposal for facilities or other uses that serve development of the private lands. Under blocked ownership, natural resources would be managed more to conserve them for people to use for long-term enjoyment of open space, wildlife, ranching, recreation and other multiple uses.

Whether or not the land should be sold is not the issue -- 150,000 acres in private ownership will be sold. Infringement on private property rights is not an option -- the options are land subdivision and development over a broad area or land subdivision and development in a concentrated area.

Chapter 1 -- Purpose and need

Introduction

The Santa Fe Pacific Railroad has contracted with Ironhorse Investors, Inc. by its manager, Ben Brooks and Associates, Inc. (hereafter referred to as the proponents) to sell approximately 150,000 acres in the Hualapai Mountains and Dutch Flat areas south and southwest of Kingman, Arizona. The proponents have proposed a land exchange with the Bureau of Land Management (BLM).

The exchange area has a mixed (checkerboard) ownership pattern as a result of an 1860s policy of granting the railroad odd-numbered sections of land for each mile of railroad built. It was recognized that land sales and subsequent development would take place within the intermingled ownership area or checkerboard lands regardless of the exchange.

This environmental impact statement (EIS) is being prepared to determine the impacts to the human environment caused by both the proposed action and no action alternatives.

The following documents are available for review at the BLM Kingman Field Office, 2475 Beverly Avenue, Kingman, Arizona (520) 692-4400 or at the BLM Arizona State Office, 222 North Central Avenue, Phoenix, Arizona (602) 417-9200.

-- Mineral Potential Report, Hualapai Mountains Land Exchange: Lands Involved (1997),
-- Biological Report, Hualapai Mountain Land Exchange (1998),
-- Phase I Environmental Site Assessment (1998),
-- Groundwater Resource Evaluation (1997),
-- An Assessment of Impacts to Existing Roads (1998) and
— Hualapai Mountains Land Exchange: Effects on Ranching and Provision of Public Services in Mohave County (1998).

Purpose of the proposed land exchange

The purpose of the exchange is to implement land management decisions concerning disposal and acquisition from the approved Kingman Resource Management Plan (RMP) (BLM 1995). This is in accordance with the Federal Land Policy and Management Act (FLPMA) of 1976, sections 102 (a)(1), 205 (b) and 206 as amended by the Federal Land Exchange Facilitation Act (FLEFA) of 1988.

Need for the proposed land exchange

Blocking up public and private land ownership is needed to facilitate long-term management of natural resources -- especially in the Hualapai Mountains and associated foothills -- and to provide for efficient sales and development of privately owned parcels within the Dutch Flat and Antares areas.

Decisions to be made

The BLM must decide whether to approve the plan amendment of the Kingman RMP and whether to approve the land exchange as stated in the proposed action or the equal appraised value alternative or to select the no action alternative.

Conformance with the resource management plan

The offered/private lands were either listed for acquisition in the RMP or acquisition of these lands is consistent with the decisions made in the land use plan and, therefore, in conformance with the plan (43 CFR 1601.0-5 [b]) (Appendix A, Part 1).

A portion of the selected/public lands proposed to go into private is not in conformance with the approved Kingman RMP because approximately 10,000 acres selected by the proponents were not identified for disposal in the RMP by township, range and section. Appendix A, Part 2 lists the lands that were not identified for disposal.

According to the regulations at 43 CFR 1600, an RMP amendment is used to consider a proposal or action that is not in conformance with the plan, but warrants further consideration before the plan is revised.

Planning issues and criteria for the proposed amendment

The parcels subject to the plan amendment procedures (43 CFR 1600) are fully described in Appendix A, Part 2. The description includes their relationship to planning issues and criteria considered in this amendment process to be land tenure, special area designations and wildlife habitat/threatened or endangered species, fully described in the Kingman RMP.

Three of the parcels subject to the plan amendment are in the White-Margined Penstemon Area of Critical Environmental Concern (ACEC). The boundary of the ACEC will not change but the acreage of designated ACEC lands will. The language used for designating the ACEC was for the public acres within the boundary and not the boundary itself.

The proposed change in the acreage of the ACEC involves approximately 1,800 acres leaving public ownership with approximately 3,950 acres coming into public ownership. The 1,800 acres would lose its ACEC designation while the 3,950 acres would be designated part of the ACEC.

Relationship with other regulations, statutes and plans

Preparation of this document complies with the National Environmental Policy Act (NEPA) and the regulations issued by the Council on Environmental Quality (CEQ) (40 CFR 1500). The proposed exchange conforms with FLPMA Section 206, as amended.

Objectives and criteria for disposal and acquisition of federal lands in general are provided by FLPMA sections 203 and 205. The BLM is authorized to complete land exchanges under FLPMA Section 206, as amended by FLEFA only after a determination is made that the public interest will be served.

When considering the public interest, the authorized BLM officer shall give full consideration to the opportunity to better manage federal lands, meeting the needs of state and local residents and their economies and securing important objectives. These objectives include, but are not limited to, protecting fish and wildlife habitat, cultural resources, watersheds and wilderness and aesthetic values, enhancing recreation opportunities and public access, consolidating lands and/or interest in lands, i.e., mineral and timber interests, for more logical and efficient management and development, consolidating split estates, expanding communities, accommodating land use authorization, promoting multiple-use values and fulfilling public needs in accordance with 43 CFR 2200.0-6(b). Processing the exchange will be done in conformance with FLEFA and the regulations set forth in 43 CFR 2200.

The regulations that determine the appraisal process by which the monetary values of the exchange lands were calculated are found at 43 CFR 2201.3-4 and in the Uniform Appraisal Standards for Federal Land Acquisitions. The provisions of these rules and regulations shall ensure that the same nationally approved standards are used in appraising lands or interest therein being acquired by or transferred out of federal ownership.

If lands are acquired by the BLM through this exchange, they will be administered under the guidance provided in the Kingman RMP.

Scoping summary

Scoping is the determination of what issues are to be analyzed for a proposed action. Issues come from the public, special interest groups, other agencies and the BLM organization. To determine issues for this project, notices and articles were published in the newspaper, and letters notified interested parties of three public meetings. Briefings and meetings were held with interested groups. From these sources, the following issues were determined to apply to the proposed exchange.

Ranching

The effect on each ranch in the exchange area will be determined. Analysis will include changes in permit administration, continuation of grazing on the selected/public and offered/private lands and compensation for range developments.

Water resources

Chapter 3 provides a general description of all water resources, including well sites, seeps, springs and ponds and associated water rights/well permits. Continued use of water for grazing and wildlife is analyzed in Chapter 4.

Riparian areas and desert washes (surface water) – Unique high-elevation riparian habitat in Bull Canyon, Hibernia Canyon and Blue Tank Wash would be involved in the exchange. These areas will be analyzed to determine how public acquisition would affect wildlife movement, forage and cover.

Socioeconomics

The effect on the county tax base and county services will be determined. This will include the effect on the school and fire department in the community of Yucca.

Biological resources

Five wildlife species (desert tortoise, mule deer, Gambel's quail, Hualapai Mexican vole and Mexican spotted owl) and one plant species (white-margined penstemon) were selected for analysis.

Pronghorn and other species will also be considered but not to the level of detailed analysis. The long-term effect on overall management of the three ACECs will be determined.

A separate technical biological report (BLM 1997) was prepared for this EIS.

Riparian

In Arizona, riparian areas are considered to be the most threatened natural plant community. Changes in ownership of riparian habitat will be presented.

Areas of critical environmental concern (ACECs)

Within the exchange area are the Hualapai Mountains Research Natural Area/ACEC, McCracken Desert Tortoise Habitat ACEC and the White-Margined Penstemon Reserve ACEC. The acreage to become public will be presented as well as any acreage leaving public ownership. The effect on management of the resources for which the ACECs were designated will be analyzed.

Recreation opportunities/access

Public access will be analyzed on both the selected/public and offered/private lands. The issue is whether public access will be changed or lost in any areas due to the exchange.

Realty

The effect on current rights-of-way, recreation and public purpose (R&PP) lands, designated utility corridors and overall land tenure adjustments will be determined. The issue of road rights-of-way necessary for Mohave County business will be analyzed.

Cultural resources

A determination of the long-term effect on cultural resource management will be made.

Mineral resources

Management of and access to mineral resources for long-term public use will be evaluated.

Soil erosion potential

The potential for soil loss under the proposed action (consolidated development), equal appraised value and no action (dispersed development) alternatives will be discussed.

Floodplains

Floodplains were not identified as an issue during the scoping process. After meeting with the Mohave County Flood Control Engineer, the BLM decided to include the location of floodplains on the offered/private and selected/public lands.

Issues beyond the scope of the EIS or eliminated from further consideration

The following issues, raised during the scoping process, are considered to be beyond the scope of this EIS. They are issues concerning development, which is not dependent on the exchange.

- What will be the ultimate population of developed lands?
- Who will maintain Alamo Road? Alamo Road is currently maintained by Mohave County and no change in this maintenance responsibility is being proposed. Therefore, this is not an issue to be analyzed in this document.
- Are there plans for industrial development along Alamo Road? No such plans have been submitted to the BLM.
- Is it possible for the county to get revenue (surcharge) from the sale of each parcel?
- An area plan should be written by the developer. An area plan as prescribed by Mohave County would modify the Mohave County General Plan. The Mohave County Board of Supervisors has directed Planning and Zoning to prepare a Dutch Flat area plan.

List of abbreviations used in this document

ACEC – area of critical environmental concern
ADEQ – Arizona Department of Environmental Quality
ADWR – Arizona Department of Water Resources
AGFD – Arizona Game and Fish Department
AUM – animal unit per month
bgs – below ground surface
BLM – Bureau of Land Management
CEQ – Council on Environmental Quality
CFR – Code of Federal Regulations
CYL – cattle year-long
EIS – environmental impact statement
EPA – Environmental Protection Agency
FLEFA – Federal Land Exchange Facilitation Act of 1988
FLPMA – Federal Land Policy and Management Act of 1976
FR – Federal Register
gpm – gallons per minute
mg/l – milligrams per liter
NEPA – National Environmental Policy Act
NOI – Notice of intent
NRCS – Natural Resources Conservation Services
PILT – payment in lieu of taxes
RAC – Resource Advisory Council
RMP – resource management plan
R&PP – Recreation and Public Purposes
SCORP – Statewide Comprehensive Outdoor Recreation Plan
SHPO – State Historic Preservation Office
TDS – total dissolved solids
U.S.C. – United States Code
USFWS – U.S. Fish and Wildlife Service

Chapter 2 -- Alternatives including the proposed action

Proposed action

The proposed action alternative is to exchange approximately 70,000 acres of offered/private lands -- including mineral rights -- for approximately 68,000 acres of selected/public lands -- including mineral rights -- (Appendix B and maps 1 and 2) near Kingman, Arizona. This area includes portions of Dutch Flat and the Hualapai and McCracken mountains. The BLM would acquire lands mostly within the Hualapai and McCracken mountains or foothills while the proponents would acquire lands in the Dutch Flat and Antares areas.

On Map 1, the lands shown in green would come into public ownership and the lands in red and salmon pink could go into private ownership. Each full square on the map is approximately 640 acres. Map 2 shows approximately 10,000 acres in red and salmon pink that could to go into private ownership. Since the offered/private and selected/public lands are of unequal value, adjustments would need to be made to the selected/public lands side of the package, this is, selected/public lands would have to be dropped from the exchange. Adjustments would be documented in the record of decision.

Future foreseeable actions

Offered/private lands

The offered/private lands would transfer into public ownership and be managed according to the BLM multiple-use mandate.

Current multiple uses adjacent to the offered/private lands include cattle grazing, recreational activities (hunting, hiking, etc.), mineral exploration and wildlife management.

Selected/public lands

The selected/public lands would go into private ownership and be managed according to the development plans of the proponents. The lands would be sold mostly in 40-acre parcels with some 160-acre parcels.

With this development come property covenants, conditions and restrictions, as well as establishment of a property owners association for road maintenance. Easements for roads, utilities and associated uses will be maintained along section lines and within the section as needed for access according to parcel size. The roads will be constructed by the developer and maintained through the property owners association.

Equal appraised value

This alternative, the BLM-preferred alternative, was developed using a combination of the appraised land values and resource information, this alternative has 8,900 fewer acres of selected/public lands than the proposed action. The offered lands are the same as those presented in the proposed action.

The difference between the selected/public lands for this alternative and for the proposed action are shown on maps 1 and 2 for the Hualapai Mountains/Dutch Flat and Antares areas, respectively. The selected/public lands that would not be transferred to private ownership are shown in salmon pink.

In the Dutch Flat area, the selected lands to be retained in public ownership are:

T. 16 N., R. 16 W., sec. 16,
T. 16 N., R. 18 W., sec. 16, N½,
T. 17 N., R. 17 W., sec. 30,
T. 18 N., R. 17 W., sec. 30 and
T. 18 N., R. 18 W., sec. 36.

In the Antares area, the selected lands to be retained in public ownership are:

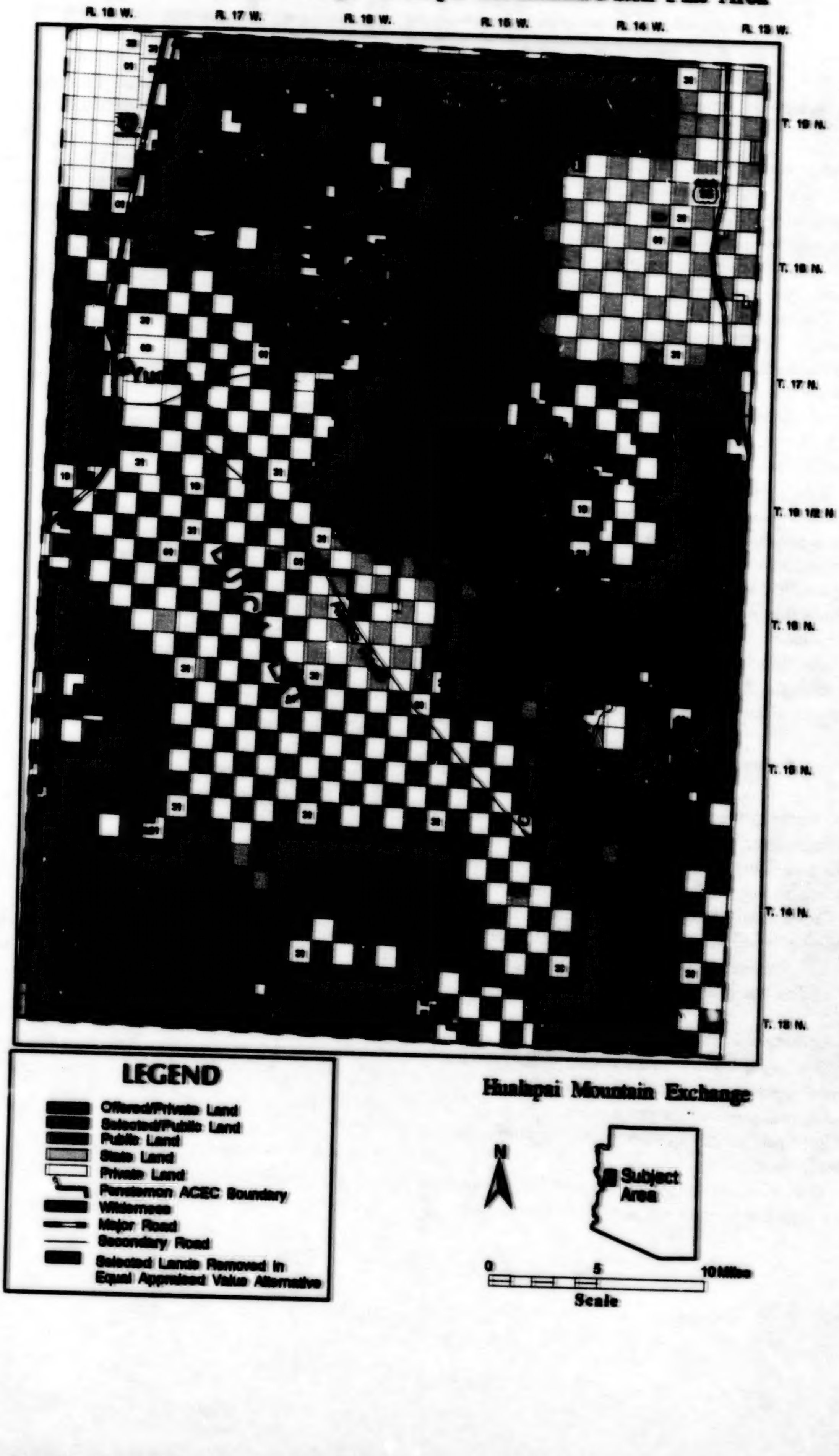
T. 25 N., R. 15 W., secs. 6, 8 and 18,
T. 25 N., R. 16 W., secs. 2 and 12 and
T. 26 N., R. 16 W., sec. 36.

In addition, two of the following four parcels could be retained in public ownership under this alternative. T. 15 N., R. 17 W., secs. 18 and 30 could be retained in public ownership if mining claim issues cannot be resolved. If the mining claim issues can be resolved, sec. 20, T. 18 N., R. 17 W. and sec. 8, T. 24 N., R. 15 W. could be retained in public ownership.

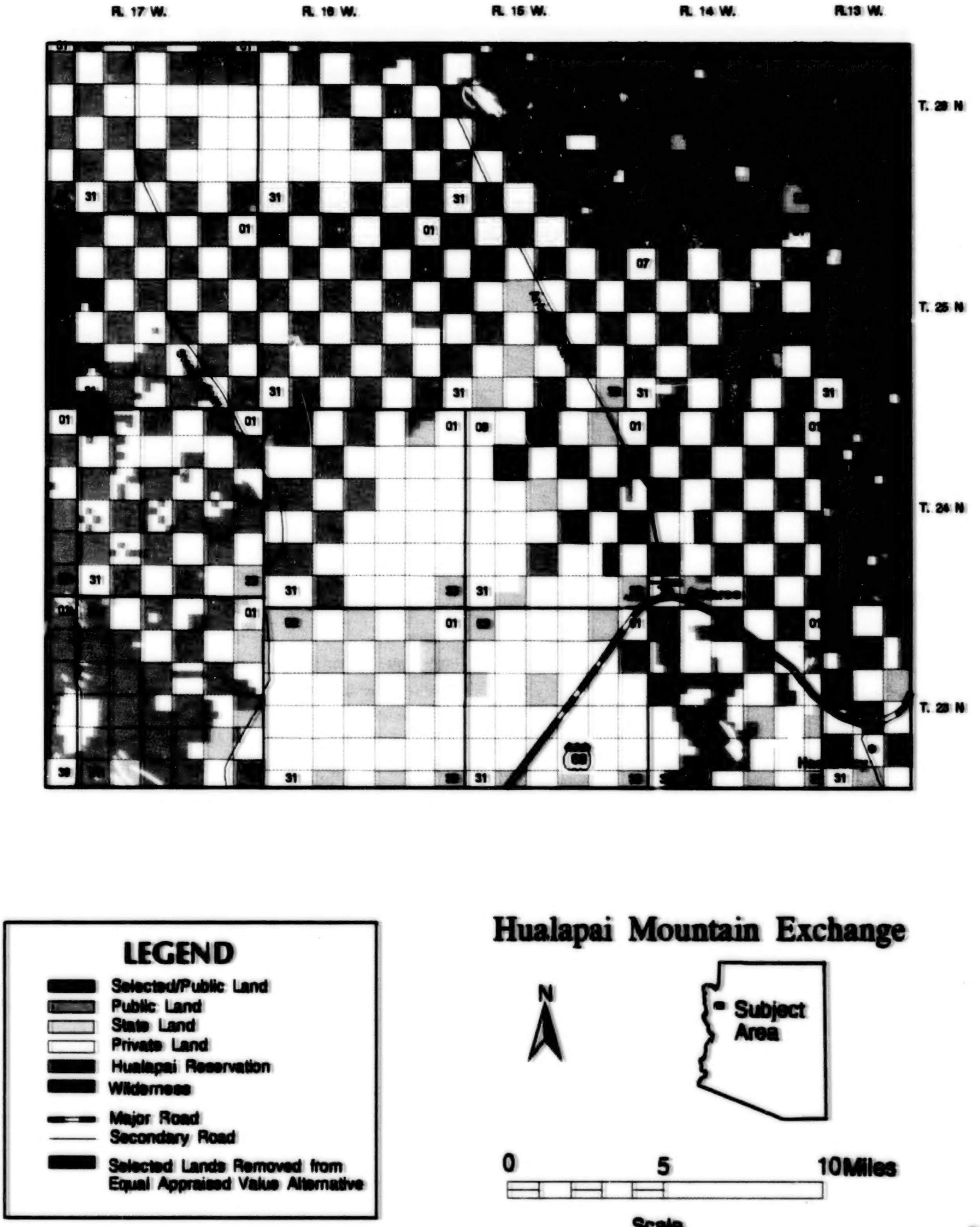
Future foreseeable actions

The future foreseeable actions would be the same as those under the proposed action.

Map 1. Land Exchange- Hualapai Mountains/Dutch Flat Area



Map 2. Land Exchange- Antares Area



No action

The no action alternative, analyzed in the EIS, would mean that no lands would be exchanged and that sale and subsequent development would occur in the intermingled or checkerboard ownership pattern.

Future foreseeable actions

Offered/private lands

The offered/private lands would remain in private ownership and be sold and developed in accordance with the development plan of the proponents (explained above). This development plan is in accordance with the county general plan.

Mountainous areas such as those in T. 18 N., R. 15 W. would most likely be sold in 160-acre parcels, but could be sold in smaller parcels depending on the availability of a sites suitable for construction.

Selected/public lands

The selected/public lands would remain in public ownership and continue to be managed under the BLM's multiple-use mandate. The selected/public lands in the Antares area would continue to be used for ranching and other multiple uses. The BLM would continue to seek to dispose of the intermingled public lands. The developer would seek rights-of-way as needed for legal access.

Actions common to all alternatives

The following items concerning the proposed plan amendment and future foreseeable actions would be implemented regardless of which alternative is chosen.

Plan amendment

It is proposed to amend the Kingman RMP to designate lands for disposal. These lands are described in Appendix A, Part 2 under Disposal of lands not specifically identified in the RMP.

Future foreseeable actions

The development of private land would be conducted in accordance with the Mohave County General Plan (March 1995), which includes provisions for preparing area plans. The Mohave County Board of Supervisors has determined that it is appropriate to prepare an area plan for the Dutch Flat area, which includes the majority of the selected/public lands in the exchange. The first meeting for developing this plan was held on August 27, 1998.

The area plan process provides a mechanism for county and local residents to plan for future growth and development of communities at a greater level of detail than can be accomplished on a county-wide level. The area plan enables residents and landowners to tailor the plan to specific community needs. The private lands adjacent to the selected/public lands which are owned by the exchange proponent are being marketed and sold in the private sector as 160- and 40-acre rural ranch subdivisions lots.

The process for developing an area plan ensures involvement of the current owners of parcels, Mohave County, the land exchange proponents and the BLM.

Summary comparison of impacts by alternative

Table 1 presents a condensed version of impacts on each issue under the proposed action, the equal appraised value and no action alternatives. The proposed action, the land exchange, represents sales and subsequent development and natural resource management in a blocked ownership pattern. The equal appraised value alternative represents sales and subsequent development and natural resource management in a blocked ownership pattern on an equal value basis. The no action alternative represents land sales and subsequent development and natural resource management in the intermingled ownership pattern.

Table 1. Summary comparison of impacts by alternative
(Chapter 4 features the complete analysis of each issue)

[illegible]	[illegible]	[illegible]	[illegible]
	Ranching		
Grazing administration	The BLM would assume grazing administration of approximately 295 cattle year-long (CYL) on about 58,392 acres of perennial/ephemeral range (offered/private lands) and lose grazing administration of about 244 CYL on approximately 49,717 acres of perennial/ephemeral range (selected/public lands). The BLM would gain administration of about 10,812 acres of ephemeral range (offered/private lands) and lose administration of about 19,191 acres of ephemeral range (selected/public lands).	The BLM would assume grazing administration of approximately 295 CYL on approximately 58,392 acres of perennial/ephemeral range (offered/private lands) and lose grazing administration of approximately 191 CYL on approximately 42,468 acres of perennial/ephemeral range (selected/public lands). The BLM would gain administration of about 10,812 acres of ephemeral range (offered/private lands) and lose administration of about 17,600 acres of ephemeral range (selected/public lands).	The BLM would continue to administer livestock grazing on the selected/public lands. The ranchers would have the option to enter into a lease with Western Land Sales for grazing and use of range improvements on the offered private lands.
People and cattle	Livestock/people conflicts would be low in the Big Sandy, Diamond Joe and Hibernia Peak Unit A allotments due to decreased private residential lands within their boundaries. An increase in conflicts can be anticipated where it is already high in the Cedar Canyon, Hackberry and Walapai Ranch allotments. The increase in private residential lands in the Boriana A and B units and Happy Jack Wash allotments would increase these conflicts where it is now low to moderate. A slight decrease in conflicts could be expected in the Hibernia Peak Unit B allotment where some of the residential lands would become BLM; however, most private lands would still be developed, creating a high amount of conflicts. In the La Cienega allotment, conflicts would be low in roughly half the allotment where BLM	The impacts would be the same as those under the proposed action except that no lands would be exchanged in the Cedar Canyon allotment and the Boriana Unit A allotment would have a slight increase in BLM lands. There would be less selected/public lands in the Crossman Peak, Happy Jack Wash, La Cienega and Walapai Ranch allotments, which would decrease the amount of potential development in those allotments.	More than two-thirds of the area within the Cedar Canyon, Hackberry, Happy Jack Wash, Hibernia Peak units A and B, La Cienega and Walapai Ranch allotments would remain in a checkerboard land pattern with residential development occurring or anticipated on much of the intermingled private lands. Livestock/people conflicts in these allotments would remain or become high. Conflicts would become moderate to high in the Boriana A and B units and Chicken Springs allotments, where approximately one-third to two-thirds of the area within their boundaries would remain in a checkerboard land ownership pattern with residential development occurring or anticipated on much of the intermingled private lands. Livestock/people conflicts would be low in the Crossman Peak allotment where about one-fourth of the area within its boundary would remain in a checkerboard

[illegible]	[illegible]	[illegible]	[illegible]
People and cattle (continued)	lands would be blocked up and high in the half where private lands would be blocked up. It is anticipated that conflicts would be high in the northwestern portion of the Chicken Springs allotment; however, most of the allotment would become blocked-up BLM, therefore overall reducing these conflicts. The Crossman Peak allotment may have a slight increase in conflicts due to additional residential lands; however, it is anticipated that these would remain low.		land ownership pattern with residential development occurring or anticipated on much of the intermingled private lands. The Big Sandy and Diamond Joe allotments would have a low amount of conflicts, although about one-fourth of their area is in a checkerboard land ownership pattern. It is not anticipated that the private lands would be developed in the foreseeable future.
Range developments	Selected/public lands – Developments will be compensated for or an easement will be granted. Offered/private lands – Developments will be acknowledged as owned, operated and maintained by the rancher (using the BLM permit system).	The impacts would be the same as those under the proposed action.	Selected/public lands – Developments will continue to be permitted by the BLM. Offered/private lands – Developments will continue to be permited as tied to the private lease.
Water resources			
Surface water	Selected/public lands – Quantity of surface runoff may increase during storms. – Quality is largely unknown except for an increase in suspended sediment during storms. – Six small earthen stock-ponds, one waterhaul and one wildlife catchment would leave federal ownership. – Increased surface runoff and sediment load in the Dutch Flat and Antares areas occurs faster than under the no action alternative Offered/private lands: – Quantity and quality unchanged; the BLM would acquire a total of 10.7 miles of riparian habitat and associated stream segments	The impacts would be the same as those under the proposed action except that four earthen stockponds, one waterhaul and one wildlife catchment would leave federal ownership.	Selected/public lands – No change from current conditions. – Impacts to surface water would be delayed in time as residential development of the checkerboard land ownership pattern would be slower than under the proposed action. Offered/private lands – Quantity of surface runoff may increase during storms. – Quality is largely unknown except for increased suspended sediment during storms. – Forty springs, four stockponds and two waterhauls would remain in private ownership.

[illegible]	[illegible]	[illegible]	[illegible]
Surface water rights/well permits	Selected/public lands – Two BLM-held stockpond filings would be transferred out of federal ownership. Offered/private lands – 21 surface water rights (for springs, drainages and stockponds) and eight well permits held by Santa Fe Pacific Railroad would be transferred to the BLM	Selected/public lands – One BLM-held stockpond filing would be transferred out of federal ownership.	Selected/public lands – The current conditions would not change. Offered/private lands – 21 surface water rights and eight well permits would remain in private ownership.
Socioeconomics			
County tax base	Selected/public lands – A loss of $11,040 in PILT payments would occur. – An initial gain of $86,000 in private property taxes would occur.	Selected/public lands – A loss of $10,068 in PILT payments would occur. – An initial gain of $72,567 in private property taxes would occur.	Selected/public lands – The current conditions would not change.
Emergency fire services	Selected/public lands – Services to developments would be required.	Selected/public lands – Impacts would be the same as those under the proposed action.	Selected/public lands – The current conditions would not change.
Schools	Selected/public lands – An increase in personal property taxes will result in an initial revenue increase to the school districts, $20,000 to the Yucca School District.	Selected/public lands – An increase in personal property taxes will result in an initial increase of $17,000 to the Yucca School District.	Selected/public lands – The current conditions would not change.
Biological resources			
Land ownership	– Management of contiguous (non-checkerboard) lands provides enhanced opportunities to manage wildlife and habitats, ensuring long-term availability and conservation of a variety of habitats for most species.– Impacts to wildlife and plants associated with increased urbanization (i.e., urban alteration such as home and road construction, fencing, landscaping and domestic animal grazing) will be restricted to the Dutch Flat and Antares areas. Wildlife may be adversely affected by increased traffic, off-road vehicles and harassment and	– Impacts would be the same as those under the proposed action except that approximately 3,840 acres of semi-desert grassland habitat would remain in public ownership in the Antares area and approximately 5,080 acres of creosote-white bursage habitat would remain in public ownership in the Dutch Flat area. These acres would be subject to the same impacts as those identified under the no action alternative.	– More urban interface conflicts with wildlife and habitat management and conservation would occur on checkerboard lands than on contiguous lands. Constraints on habitat conservation on public lands and development of private land would occur more frequently and over a larger area. – Impacts of urbanization (described under the proposed action) as a result of the no action alternative would be over a much larger area and result in twice as much habitat being negatively affected by associated human activities. Urbanization impacts will spill over onto the adjacent public lands sections. Demands for access roads, rights-of-way,

Land ownership (continued)	mortality due to free-roaming cats and dogs.		e.g., powerlines and telephone lines, will occur at a greater frequency on these public lands compared to the proposed action. Management of both private and public lands in this scenario would be burdensome.
Species	– Most species, including mule deer, Gambel's quail, Hualapai Mexican vole, Mexican spotted owl, desert tortoise and white-margined penstemon, will gain in acreage of priority or preferred habitats. These habitats will exhibit high continuity and integrity. Open space will be conserved, allowing free movement of wildlife. Habitats will be relatively free from impacts associated with human activities. – Greater security and preservation of habitats will provide long-term conservation of endangered species. – Some lower quality habitats will be affected by intense, increasing urbanization; however, these impacts would be localized.	– Impacts to mule deer and Gambel's quail would be the same as those under the proposed action except that approximately 3,840 acres of semi-desert grassland habitat would remain in public ownership in the Antares area and 5,060 acres of creosote-white bursage habitat would remain in public ownership. Mule deer and Gambel's quail utilizing these acres will be subject to the same impacts as those under the no action alternative. – Impacts to the Hualapai Mexican vole and the Mexican spotted owl and their habitats would be the same as those under the proposed action. There is no vole or spotted owl habitat in the selected lands that dropped out under this alternative. — Impacts to desert tortoise and their habitat would be the same as those under the proposed action except that 5,060 acres of desert tortoise Category III habitat would remain in public ownership near I-40. Impacts to tortoise and their habitat on these 5,060 acres would be the same as those under the no action alternative. There is no tortoise habitat in the Antares area.	– An increase of preferred or priority habitats for most species of wildlife will not be realized. The continuity and integrity of habitat in the Hualapai Mountains will be disrupted by urbanization. Open space will be altered and free movement of wildlife hindered. – Long-term conservation and security of endangered species habitats would be less effective. Recovery goals for endangered species would not likely be achieved. – Impacts on lower quality habitats as a result of urbanization will be more widespread and include higher quality habitats. These impacts would spill over onto adjacent public lands sections.

[illegible]	[illegible]	[illegible]	[illegible]
Riparian resources			
Riparian resources	The public (BLM) would acquire 10.7 miles of riparian habitat and lose no riparian habitat.	Impacts would be the same as those under the proposed action. There is no riparian habitat in the selected lands that dropped out under this alternative.	No change in ownership of riparian habitat would occur.
Areas of critical environmental concern (ACECs)	Hualapai Mountains Research Natural Area/ACEC – Acquisition of lands will complete consolidation of lands within this ACEC and management will be completely under public ownership.	Hualapai Mountains Research Natural Area/ACEC – Impacts to this ACEC would be the same as those under the proposed action. None of the selected lands that dropped out under this alternative are in this ACEC.	Hualapai Mountains Research Natural Area/ACEC – Endangered species habitat would not be managed as public lands, but could be developed. It is highly unlikely that the ACEC management goals and objectives would be met under this alternative.
	McCracken Desert Tortoise Habitat ACEC – Acquisition of lands through this exchange will further consolidate public lands within this ACEC and further the goals and objectives for which this ACEC was established. Category I desert tortoise habitat would be further conserved under public ownership.	McCracken Desert Tortoise Habitat ACEC – Impacts would be the same as those under the proposed action. None of the selected lands that dropped out under this alternative are in this ACEC.	McCracken Desert Tortoise Habitat ACEC – Sensitive species habitat would not be managed as public lands. These lands could be developed. It is highly unlikely that the ACEC management goals and objectives would be met under this alternative.
	White-Margined Penstemon ACEC – Acquisition of lands through this exchange will further consolidate public lands within this ACEC and facilitate conservation of this species. This will further the goals and objectives for which this ACEC was established.	White-Margined Penstemon ACEC – Impacts would be the same as those under the proposed action. None of the selected lands that dropped out under this alternative are within this ACEC.	White-Margined Penstemon ACEC – High-value sensitive species habitat would not be managed as public lands. These lands could be developed and much of this species' priority habitat lost. It is highly unlikely that the ACEC management goals and objectives would be met under this alternative.
Recreation opportunities/access			
Recreation opportunities	– There would be no net change in the number of public acres available for dispersed recreation activities such as seasonal hunting, hiking, etc.	Impacts would be the same as those under the proposed action, except for the net gain of 10,273 acres of public lands available for dispersed recreation.	– No net loss or gain of public acres would occur, but the quality and availability of dispersed recreation opportunities in the project area could be lessened because the public may no longer be able to use adjacent private lands as part of their activities.

Recreational opportunities (continued)	– Possible increase in incidence of accidental wildfire, trash dumping, littering, livestock conflicts and feral dogs/cats on public lands near development areas. – Reduced likelihood of accidental wildfire, trash dumping, littering, livestock conflicts and feral dogs/cats on public lands in areas where offered/private lands come into public ownership, especially at higher elevations of the Hualapai Mountains.		– Throughout the project area, aesthetic qualities of public lands near private property may be lessened by the presence of residences, accidental wildfire, trash dumping, littering and the creation of new roads and trails. – Hunting activities would be increasingly restricted on public lands near new residences.
Roads/road access	– Public use of 123 miles of roads in the Dutch Flat and Hualapai valleys would be lost; public access within the Dutch Flat and Hualapai valleys would be limited to established and planned public roadway easements provided by the proponent. – Four road which have provided access to adjacent public lands in Dutch Flat could be lost. – Public access on 78 miles of road in south Dutch Flat and in the Hualapai Mountains would be more secure as they would come into exclusive public ownership.	Impacts would be the same as those under the proposed action, except for the loss of use of 117 miles of roads which cross the Dutch Flat and Hualapai valleys.	– A total of 201 miles of existing roads in the project area could become discontinuous, fragmented or closed by landowners. – Road access to adjacent public lands in Dutch Flat would be lost at four locations.
Realty			
Rights-of-way	None of the 37 rights-of-way on the selected/public lands (Appendix H) will be canceled under either the proposed or no action alternatives. Under the proposed action, nine of the 37 rights-of-way would be reserved to the U.S. and continue to be administered by the BLM. The remaining 28 rights-of-way would be transferred with the land and administered by private landowners. All 14 easements on the offered/private lands will be honored and managed to the end of their terms.	Numbers 5, 6 and 9 of Appendix H would drop out. Of the 34 rights-of-way on the selected/public lands, seven would be reserved to the U.S. and continue to be administered by the BLM. The remaining 27 would be transferred with the land and be administered by private landowners. All 14 easements on the offered/ private lands will be honored and managed to the end of their terms.	No changes will occur in administration of the rights-of-way.

[illegible]	[illegible]	[illegible]	[illegible]
Land tenure adjustments	Land ownership would adjust substantially in the Hualapai Mountains/Dutch Flat area. The exchange would create well-blocked areas of public and private land ownership (Map 10).	Impacts would be the same as those under the proposed action.	No changes will occur to the land tenure.
Cultural resources			
Prehistoric	Nine prehistoric camps would be negatively impacted by transfer to private ownership. Lands with a high probability of containing cultural sites would be acquired. Mountain and foothill areas sacred to the Hualapai Tribe would be acquired.	Nine prehistoric camps would continue to be managed in accordance with federal laws and BLM policies. Retained cultural properties would probably be negatively impacted due to development on nearby private lands. Lands with a high probability of containing cultural sites would be acquired. Mountain and foothill areas sacred to the Hualapai Tribe would be acquired.	Cultural properties would continue to be managed in accordance with federal laws and BLM policies. Development of surrounding and adjacent p[illegible] owned sections would pro[illegible] result in increased illegal arti[illegible] removal. Lands with a high probability of containing cultural sites would not be acquired. Mountain and foothill areas sacred to the Hualapai Tribe would not be acquired.
Historic	Seven historic sites would be negatively impacted by transfer to private ownership.	Four historic sites would continue to be managed in accordance with federal laws and BLM policies. Retained cultural properties would probably be negatively impacted due to development on nearby private lands. Three historic sites would be negatively impacted by transfer to private ownership.	Impacts would be the same as those under the no action alternative above.
Mineral resources			
Locatable minerals	Prospecting will be encouraged somewhat by a more favorable land ownership pattern.		Prospecting will continue at the current low levels of activity, impeded by checkerboard land ownership status.
Saleable minerals	Best developed gravel sources along I-40 will be transferred into private ownership and will probably continue to be operated as such, resulting in a loss of revenue to the U.S.		Gravel pits will continue to be operated on public lands, generating some revenue to the U.S.

[illegible]	[illegible]	[illegible]	[illegible]
Soil erosion potential	The public (BLM) would acquire 43,600 acres with severe erosion potential.	The public (BLM) would acquire 42,879 acres with severe erosion potential.	A total of 43,600 acres with severe erosion potential would remain in private ownership to be subdivided and developed.
Floodplains			
Floodplain analysis	A total of 6,731 acres of floodplains will be conveyed from public to private domain and 2,075 acres of floodplains will be conveyed to public ownership. This will result in an increase of 4,656 acres of floodplains in private domain.	A total of 6,109 acres of floodplains will be conveyed from public to private domain and 2,075 acres of floodplains will be conveyed to public ownership. This will result in an increase of 4,034 acres of floodplains in private domain.	No acreage of floodplains will change ownership.

Chapter 3 -- Affected environment

Affected resources

The following are descriptions of items or resources that would be affected by the proposed land exchange; these could also be affected if the land exchange did not happen. The items to be described are ranching, water resources, socioeconomics, biological resources, riparian areas, areas of critical environmental concern (ACECs), recreation opportunities/access, realty, cultural resources, mineral resources and soil erosion potential.

Ranching

The proposed exchange area contains 13 allotments.

The Cedar Canyon, Hackberry and Walapai Ranch allotments, in the Antares area in the Hualapai Valley, include only selected/public lands, those which would go into private ownership. The remaining 10 allotments are in the Hualapai Mountains/Dutch Flat area. Of these, the Boriana Unit A, Chicken Springs, Crossman Peak, Happy Jack Wash and La Cienega allotments contain both offered/private and selected/public lands. The Hibernia Peak Unit A and Unit B, Diamond Joe and Big Sandy allotments include only offered/private lands and the Boriana Unit B allotment includes only selected/public lands. Maps 3 and 4 show the allotment boundaries and current land ownership.

Table 2 summarizes ownership and land status within each allotment.

Big Sandy allotment

This allotment north of Wikieup is a perennial/ephemeral allotment with a stocking rate of 655 cattle year-long (CYL). BLM lands make up the bulk of this allotment; however, some deeded lands exist in a checkerboard pattern in the northeastern, central western and far western areas.

Boriana Unit A allotment

The land ownership pattern is checkerboarded in the western part of this allotment northeast of Yucca, with much of the private lands subdivided. Lands in the eastern portion of the allotment are primarily BLM, except for some scattered small parcels of deeded lands. This is a perennial/ephemeral allotment with a stocking rate of 202 CYL.

In the southwestern portion of the allotment are 2,082 acres of selected/public lands, representing 7.1 percent of the BLM lands and 6.7 percent of the lands on which forage is allocated. There are also 972 acres of offered/private lands (2.3 percent of the lands within the allotment) for which the permit holder does not hold a grazing lease.

Boriana Unit B allotment

The western part of this ephemeral allotment northwest of Yucca is primarily BLM. The eastern half is composed of checkerboarded BLM and deeded lands. Approximately 652 acres of selected/public lands are included in the southeastern portion of this allotment. This is 6.5 percent of the BLM lands within the allotment.

Cedar Canyon allotment

This allotment north of Kingman is a perennial/ephemeral allotment with a yearlong stocking rate of 575 cattle and 22 horses. The ownership pattern of BLM and deeded lands is checkerboarded throughout the allotment.

Approximately 3,199 acres of selected/public lands are included in the northwestern portion of this allotment. This represents 6.6 percent of the BLM lands in the allotment and 3.7 percent of the total acreage in the allotment on which forage is allocated.

Chicken Springs allotment

This allotment, south of Yucca and west of Wikieup, is a perennial/ephemeral allotment with a yearlong stocking rate of 395 cattle and five horses. Land ownership in this allotment is primarily BLM; however, extensive deeded lands are intermingled in a checkerboard throughout the central, northwestern and southeastern portions of the allotment. There are 7,504 acres of selected/public lands, representing 7.9 percent of BLM lands and 5.7 percent of the lands on which forage is allocated. Approximately 16,512 acres of offered/private lands are scattered throughout the north and south central, as well as in the southeastern, parts of the allotment. All but 580 acres of these offered/private lands are leased for grazing by the permit holder.

Crossman Peak allotment

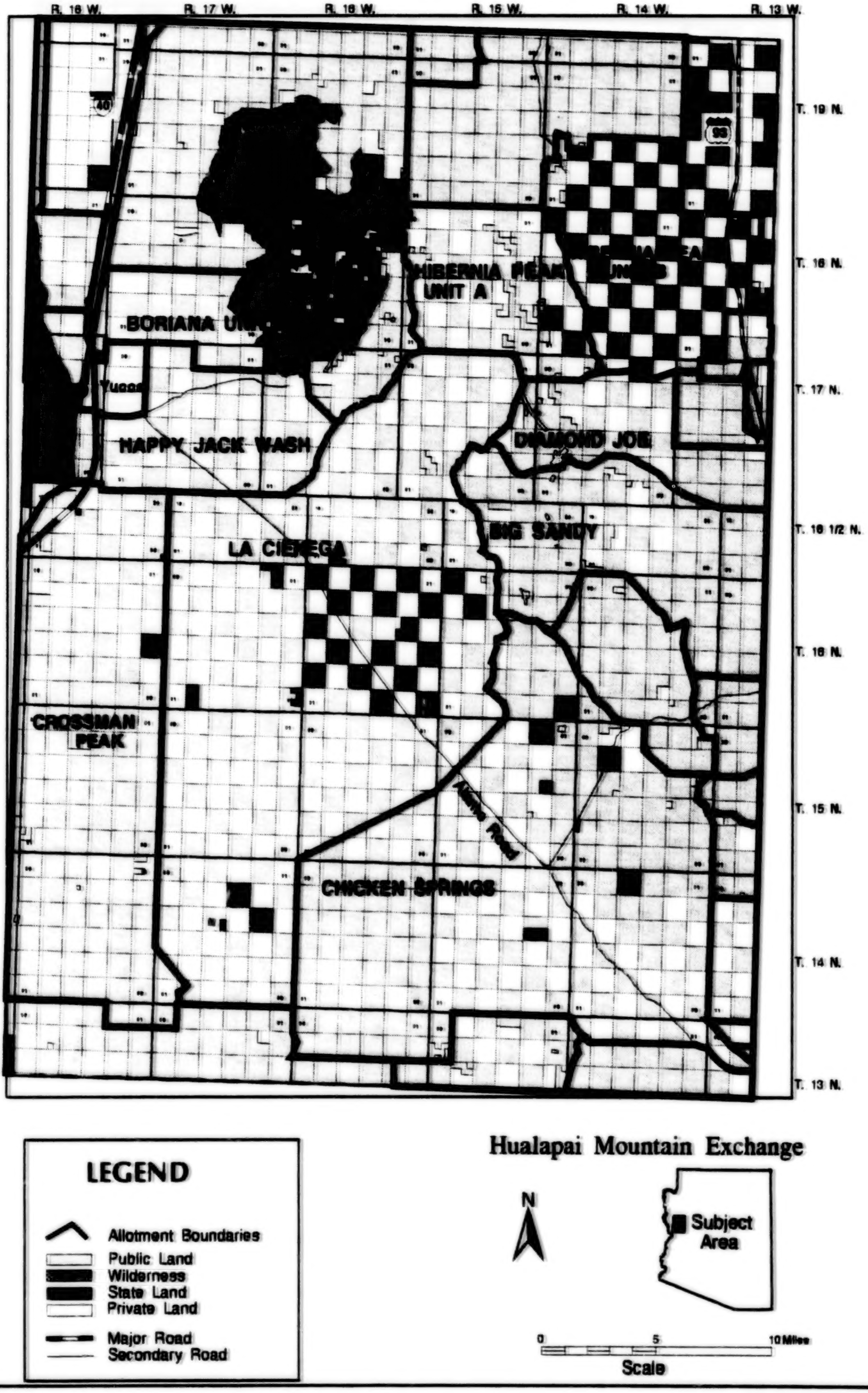
BLM lands make up the bulk of this ephemeral allotment south of Yucca and east of Lake Havasu

Table 2. Land status of allotments

Allotment (operator/ total acres) **Less than one percent*	*BLM lands in allotment (acres/ % of allotment)*	*Lands owned and/or leased by rancher (acres/ % of allotment)*	*Lands not owned or leased by rancher (acres/ % of allotment)*	*State land in allotment (acres/ % of allotment)*	*Selected/ public lands (acres/ % of allotment)*	*Offered/ private lands (acres/ % of allotment)*
Big Sandy (Byner Cattle Co./ 87,171)	64,913/ 74	9,668/ 11	12,590/ 15	0	0	2,205/ 3
Boriana Unit A (Jerre Cavaliere/ 39,701)	29,399/ 74	1,712/ 4	8,709/ 22	0	2,082/ 5 (640/ 2)	916/ 2
Boriana Unit B (Jerre Cavaliere/ 11,790)	9,999/ 85	0	1,791/ 15	0	652/ 6 (640/ 5)	0
Cedar Canyon (John L. Neal/ 88,231)	48,459/ 55	38,899/ 44	822/ 1	51/ *	3,199/ 4 (0/ 0)	0
Chicken Springs (Bar S Ranch, Inc./ 135,400)	95,272/ 70	34,342/ 25	3,469/ 3	2,879/ 2	7,504/ 6	16,512/ 12
Crossman Peak (Gordon Huffaker/ 135,360)	108,483/ 80	60/ *	26,177/ 19	680/ *	7,050/ 5 (6,730/ 5)	642/ *
Diamond Joe (Byner Cattle Co./ 23,768)	16,223/ 68	4,560/ 19	2,875/ 12	110/ *	0	660/ 3
Hackberry (X-Bar Ranch Inc./ 68,638)	32,881/ 48	20,539/ 30	12,764/ 19	2,454/ 3	1,280/ 2	0
Happy Jack Wash (Clyde and Lisa Westcott/ 47,011)	24,386/ 52	40/ *	22,585/ 48	0	4,528/ 10 (3,200/ 7)	30/ *
Hibernia Peak Unit A (Anita Waite/ 27,470)	13,641/ 50	12,301/ 45	21/ *	1,507/ 5	0	11,139/ 41
Hibernia Peak Unit B (Anita Waite/ 40,687)	1,045/ 3	20,530/ 50	340/ 1	18,772/ 46	0	2,032/ 5
La Cienega (Clay and Sandy Tyree/ 169,372)	71,382/ 42	81,128/ 48	3,201/ 2	13,661/ 8	37,417/ 22 (35,518/ 21)	34,692/ 20
Walapai Ranch (Wendell H. Nuttall/ 29,762)	10,794/ 36	14,384/ 48	670/ 2	3,914/ 13	5,195/ 17 (4,556/ 15)	0

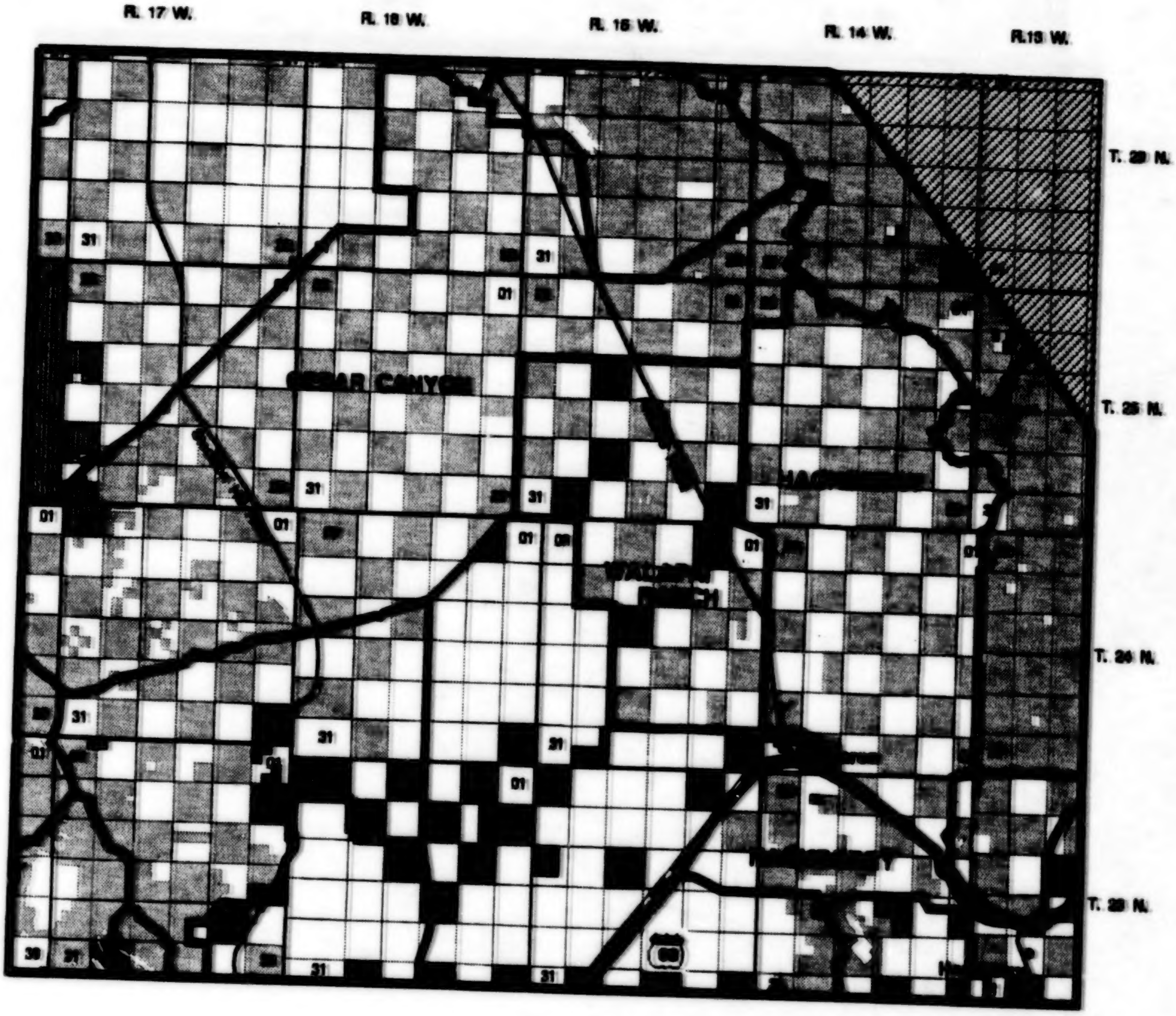
(NOTE: Figures displayed in parentheses in column six represent figures under the equal appraised value alternative).

Map 3. Grazing Allotments- Hualapai Mountains/Dutch Flat Area
Current Land Status



Hualapai Mountain Exchange

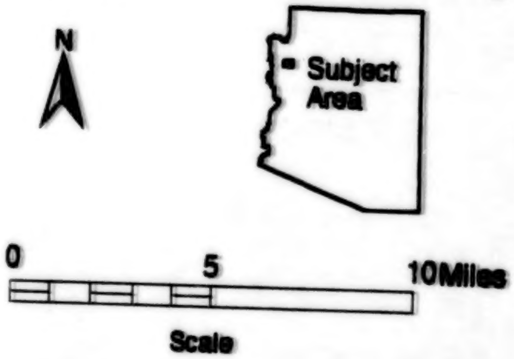
Map 4. Grazing Allotments- Antares Area
Current Land Status



LEGEND

- ⬛ Allotment Boundaries
- ▩ Public Land
- ■ State Land
- □ Private Land
- ▨ Hualapai Reservation
- ■ Wilderness
- ━ Major Road
- ─ Secondary Road

Hualapai Mountain Exchange



City. Some deeded lands are intermingled in the central and northeastern portions.

In the northeastern corner of this allotment are approximately 7,050 acres of selected/public lands, about 6.5 percent of the BLM lands. There are approximately 642 acres of offered/private lands (less than one percent of the allotment) near the allotment's eastern boundary which the permit holder does not lease for grazing.

Diamond Joe allotment

This allotment between Wikieup and Yucca has a yearlong stocking rate of 150 cattle. Land ownership is predominantly BLM with some intermingled private lands in the central and western parts.

The 1,010 acres of offered/private lands in the far northern and far western portions of the allotment are not leased by the permit holder. Including this unleased acreage, the offered/private lands represent approximately four percent of the allotment.

Hackberry allotment

This perennial/ephemeral allotment, northeast of Kingman with the town of Hackberry on its extreme southeast corner, has a stocking rate of 534 CYL.

The land ownership is mostly checkerboard BLM and deeded lands throughout. The 1,280 acres of selected/public lands in this allotment make up 3.9 percent of the BLM lands and 2.3 percent of the total acreage on which forage is allocated.

Happy Jack Wash allotment

This perennial/ephemeral allotment, which envelopes the town of Yucca and the Ford Proving Grounds, has a stocking rate of 90 CYL. Land ownership in the allotment east of Interstate 40 is a checkerboard of BLM and deeded lands; west of Interstate 40 is primarily BLM. Much of the deeded lands has been subdivided.

The 4,528 acres of selected/public lands, mostly in the southern portion of the allotment, represent 18.6 percent of the BLM lands in the allotment and 18.5 percent of the lands upon which forage is allocated. Thirty acres of offered/private lands on the southeastern boundary of the allotment are not leased for grazing by the permit holder.

Hibernia Peak Unit A allotment

This allotment, east of Yucca and north of Wikieup, and the Hibernia Peak Unit B allotment make up the Cane Springs Ranch. The perennial/ephemeral allotment has a yearlong stocking rate of 230 cattle; however, as one pasture of this ranch, this allotment is generally used only seasonally to allow for a flexible stocking rate.

The pattern of land ownership, checkerboarded throughout the allotment, consists mostly of BLM and deeded lands with a few parcels of state lands. There are 11,139 acres of offered/private lands throughout this allotment, approximately 41 percent of the allotment.

Hibernia Peak Unit B allotment

Although this allotment north of Wikieup has a yearlong stocking rate of 410 cattle, the number may vary due to seasonal use of the Hibernia Peak Unit A allotment.

The land status pattern on this allotment is almost entirely checkerboarded, composed of 20,870 acres of deeded, 18,772 acres of state and 1,045 acres of BLM lands. The BLM lands make up only 2.6 percent of this allotment.

La Cienega allotment

This perennial/ephemeral allotment southwest of Yucca has a yearlong stocking rate of 500 cattle. Two pastures in the southwestern portion of the allotment – consisting of approximately two townships, or 41,493 acres – are designated as ephemeral. The land ownership pattern throughout this allotment is a checkerboard of BLM and deeded lands, except for an area composed mostly of state and deeded lands in the central part of the allotment. A few other parcels of state land are strewn about the allotment.

Approximately 37,417 acres of selected/public lands in the allotment represent 52.4 percent of the BLM lands and 22.5 percent of the allotment's total acreage on which forage is allocated. These lands are in the southwestern two-thirds of the allotment, with the exception of the southernmost township. About 34,692 acres of offered/private lands are in the northeastern one-third of the allotment and in its southernmost township, representing 20.9 percent of the allotment on which forage is allocated.

Walapai Ranch allotment

This perennial/ephemeral allotment north of Kingman has a stocking rate of 236 CYL. Land ownership is mainly BLM checkerboarded with deeded, much of which has been subdivided. The approximately 5,195 acres of selected/public lands in this allotment, primarily in its southern half, represent 48 percent of the BLM lands in the allotment and 17.9 percent of the lands on which forage is allocated.

Water resources

Surface water

The limited occurrence of surface water in the exchange area is the result of its semi-arid climate. High elevation areas in the southern part of the exchange area may receive as little as three inches of rain per year. The occurrence of surface water in the exchange area is summarized below; individual water sources (stockponds, springs, waterhauls and catchments) are described in Appendix C for the selected/public lands and Appendix D for the offered/private lands.

– Much of the exchange area is in the Bill Williams River watershed; streams in this area drain either east toward the Big Sandy River (which flows into Alamo Lake) or south into the Bill Williams River.

– Part of the exchange area, which includes Dutch Flat, drains into Sacramento Wash, which flows directly into the Colorado River.

– The Antares area is contained in the Hualapai Basin; the surface drainage of this basin is internal and flows into Red Lake.

– There are no large perennial (year-round flowing) streams.

– The offered/private lands contain short perennial segments in Bull, Hibernia and Beecher canyons and Cow Creek. The quantity of baseflow of perennial segments is unknown. Riparian areas associated with these streams total approximately 10.7 miles – Bull Canyon (4.9 miles), Hibernia Canyon (4.6 miles), Beecher Canyon (0.77 miles), Cow Creek (0.47 miles) and Pilgrim Wash (0.01 miles).

– A few streams draining out of the Hualapai Mountains may, in some years, flow seasonally due to snowmelt.

– The vast majority of streams are ephemeral, only flowing during and immediately after rains. Such normally dry streams are always above the water table.

– All of the approximately 40 known springs are on the offered/private lands; only five of the springs are developed. Of the 10 stockponds, six are on the selected public lands and four are on the offered/private lands. One Arizona Game and Fish Department (AGFD) wildlife catchment and one waterhaul are on the selected/public lands; two waterhauls are on the offered/private lands.

– There are no published surface water quality data specific to the selected/public lands and the offered/private lands.

Groundwater

The exchange area is characterized by broad, gently sloping valleys separated by north-to-northwest-trending mountains. The exchange area can be separated into four distinct groundwater areas (Map 5), as summarized in this section from five sources.

– Hargis and Associates, Inc. 1997. Groundwater Resource Evaluation, Santa Fe Ranches, Mohave County, Arizona.

– Rascona, S.J. 1991. Map Showing Groundwater Conditions in the Sacramento Valley Basin, Mohave County, Arizona.

– Anning, D.W. and N.R. Duet. 1994. Summary of Ground-Water Conditions in Arizona, 1987-1990. U.S. Geological Survey Open-File Report 94-476.

– Freethey, G.W.,, et. al., 1986. Description and Generalized Distribution of Aquifer Materials in the Alluvial Basins of Arizona. U.S. Geological Survey Atlas HA-663.

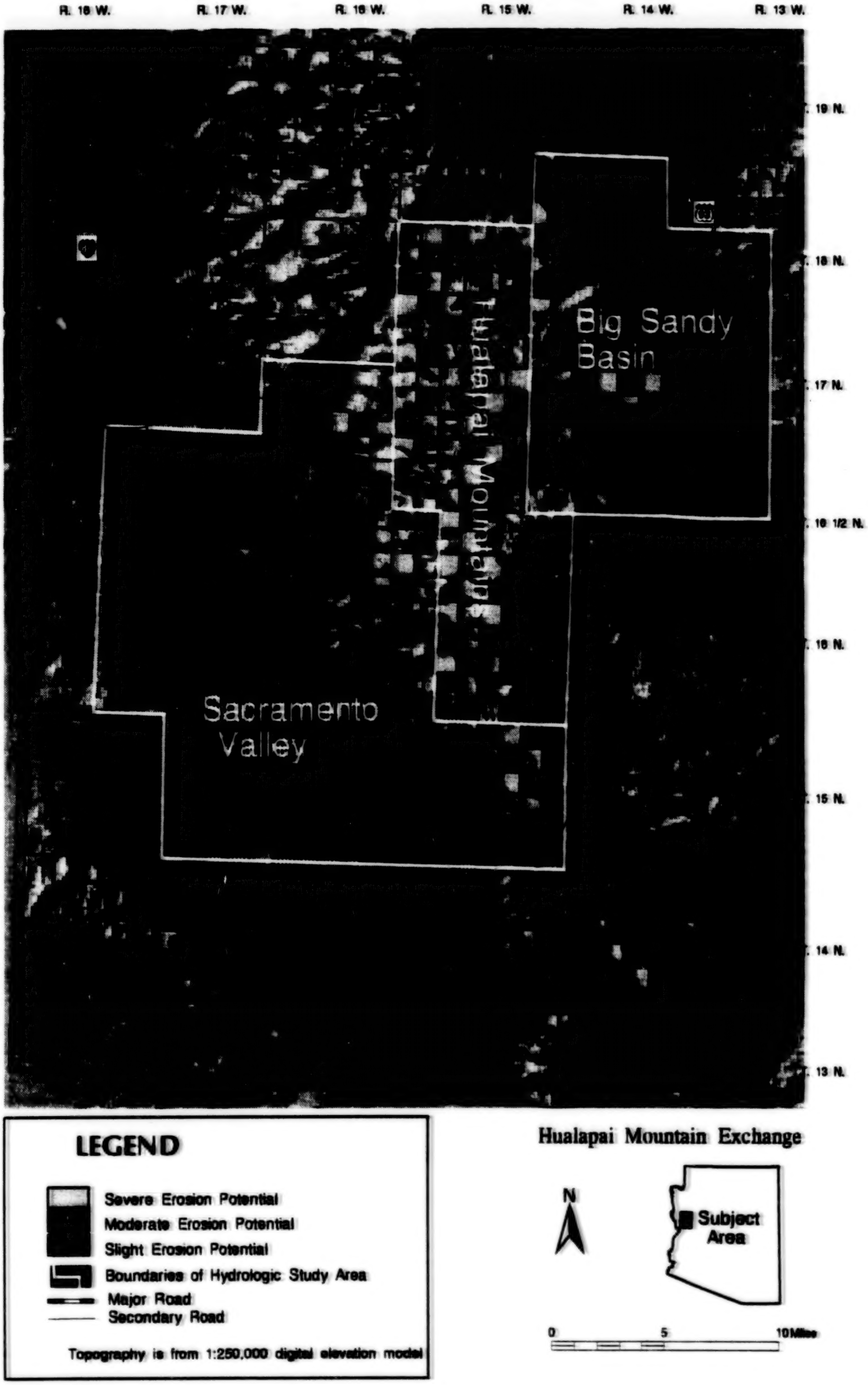
– Willdan Associates. 1993. City of Kingman Water Adequacy Study. 1717 W. Northern Ave., Suite 112, Phoenix, Arizona 85021.

The Sacramento Valley subarea is in the southern part of the Sacramento Valley and includes Dutch Flat. This subarea is a 700- to 4,000-foot deep, sediment-filled basin underlain by bedrock and bordered on the east and west by bedrock mountain ranges. The primary water-bearing unit is the older alluvium, which yields 100 to 1,000 gallons per minute (gpm) to wells. Depths to water below ground surface (bgs) are generally 250 to 500 feet in the northern part of Dutch Flat near Yucca and approaching 950 feet in the southern part of Dutch Flat. Groundwater use in the entire Sacramento Valley (there is no estimate for the southern part of the valley alone) ranged from 2,000 to 6,000 acre-feet/year from 1965 to 1990; prior to 1985, groundwater use was less than 500 acre-feet/year. The estimated annual recharge for the entire Sacramento Valley is 2,000 acre-feet. The estimated amount of recoverable groundwater beneath the Sacramento Valley subarea, which is only the southern part of entire Sacramento Valley, is 5.5 million acre-feet to a depth of 1,000 feet bgs. There are 56 registered wells in the Sacramento Valley subarea, most of which are used for domestic and stockwatering uses. Groundwater quality is generally good; total dissolved solids (TDS) from 36 of 48 samples in 1990 were below the secondary drinking water standard of 500 milligrams per liter (mg/l) and fluoride ranged from 0.3 to 5.1 mg/l.

There is one unregistered well on an abandoned millsite on the selected lands within this groundwater subarea.

The Big Sandy subarea, which is part of the Big Sandy River Valley, is a north-south-trending,

Map 5. Hualapai Mountain/Dutch Flat Area
Hydrologic Study Area and Erosion Potentials



sediment-filled basin underlain by bedrock and bordered on the east and west by bedrock mountain ranges. The primary water-bearing units are the upper basin fill, floodplain alluvium and lower basin fill. Depths to groundwater range from 23 to 300 feet bgs, with yields to wells as much as 1,000 gpm. Groundwater use was approximately 2,000 to 3,000 acre-feet per year from 1978-1985; prior to 1978, groundwater use was less than 500 acre-feet/year. Recharge to groundwater has not been estimated, although the amount of recoverable groundwater beneath the Big Sandy subarea is estimated at 2.1 million acre-feet. There are 43 registered wells in the subarea, most of which are used for domestic, stockwater and mining uses. Groundwater quality is fairly good – total dissolved solids are in the range of 350 to 800 mg/l. However, fluoride is as high as 20 mg/l in some wells; the federal maximum contaminant level for fluoride is 4.0 mg/l.

The Hualapai Mountains subarea separates the Sacramento Valley from the Big Sandy River Valley. The almost north-south-trending mountain range is mostly granite. The bedrock units in the Hualapai Mountains are essentially non-waterbearing. Small quantities of groundwater may be present along drainages in shallow alluvium and fractured bedrock. Depths to water are generally less than 50 feet below ground surface, and yields to a well would generally be less than 10 gpm. There are 27 registered wells in the Hualapai Mountains subarea, most of which are used for stockwatering. The amount of recoverable groundwater in the Hualapai Mountains subarea is unknown. Groundwater quality is variable – the TDS from wells ranges from 440 to 2,880 mg/l., which means that some wells may not be suitable for domestic use without treatment.

The Antares subarea, 20 to 25 miles northeast of Kingman and not shown in Map 5, is in the southern part of the Hualapai Valley. The primary aquifer is the older alluvium. The depth to groundwater ranges from 300 feet bgs in the northern part of the subarea to 600 feet bgs in the south. Yields to wells near the subarea range from 10 to 1,200 gpm; however, it should be noted that several sections of the selected/public lands (secs. 12, 14, 22 and 24 of T. 24 N., R. 15 W.) include bedrock outcrops which probably contain only small quantities of groundwater in fractured and weathered zones. Groundwater use in the entire Hualapai Valley ranged from 4,000 to 6,000 acre-feet per year from 1968 to 1985; prior to 1960, groundwater use was less than 500 acre-feet/year. The estimated annual groundwater recharge to the entire Hualapai Valley is 2,000 acre-feet/year. The estimated amount of recoverable groundwater beneath the entire Hualapai Valley is five million acre-feet to a depth of 1,200 feet bgs. Groundwater quality is generally good; TDS in most wells in the southern Hualapai Valley are below 500 mg/l.

Surface water rights/wells permits

Arizona Department of Water Resources (ADWR) records show two stockpond claims held by the BLM on the selected/public lands and no well permits (Appendix E).

Of the 24 surface water rights on file with ADWR on the offered/private lands, 21 are pre-1919 claims for springs and drainages and three are stockpond claims. Twelve wells are registered with ADWR; however, locations for three private wells for domestic and/or irrigation use appear to be incorrect and not on the offered/private lands (Appendix F).

Socioeconomics

Population and demographics

The entire exchange area is in Mohave County, the state's second largest in size and fifth largest in population, estimated to be 114,000 in 1993 (Arizona Department of Economic Security 1993). Minorities make up 9.7 percent of the county's population in the form of Hispanics, 5.0 percent, Native Americans, 2.3 percent and African-Americans and Asian-Americans at least than one percent each.

Mohave County is in northwestern Arizona, approximately 150 miles northwest of Phoenix. The exchange area is divided into the Hualapai Mountains/Dutch Flat area and the Antares area.

Taxes

Property taxes are an important source of locally-based revenues – $100,192,577 was collected in 1997 tax payments plus taxes, penalties and interest collected in 1997 for unpaid taxes in prior years. Federally owned lands form one basis for the federal government to make payments to local governments to offset the limited property tax base that results from government land ownership. These payments in lieu of taxes (PILT) are established and limited in the total amount payable to any county by formulas based on the county's involved population and federal acreage.

Population is a determining factor in setting limits (ceiling) for payments made to local government. For Mohave County, the applicable rate in FY96 was $0.16/acre of federal lands; the rate may change from year to year. In 1996, the county received $1,052,884 in PILT payments.

Mohave County collected $12,000 in private property taxes for the offered/private lands in 1997.

Yucca School District

Nearly 80 percent of the offered/private lands are in the Yucca School District. The school district consists of a three-member school board which oversees operation of the Yucca School for children in kindergarten through eighth grade. The school, which employs three teachers and an administrative assistant, can handle a maximum of 45 students before expanded facilities and hiring more staff would be needed.

Most of the children who attend the school live in the town of Yucca; a few reside in the outlying areas within approximately five to 10 miles. Bus service is not provided; therefore, parents are responsible for transporting their children to school.

Any transportation system needed in the future would be decided upon by the school board. The necessity of such a system would be based on population and access.

High school students are bused to Kingman High School.

Yucca Fire District

The Yucca Fire District covers approximately 125 square miles, in which the land ownership is intermingled private and public lands. The Yucca Fire Department responds to fires on both private and public lands. The fire district has a station in Yucca and is building a substation in Buckeye. Plans include a substation near the Franconia exit.

Fires in the Dutch Flat and Alamo Road area, not currently covered under a fire district, are responded to by the Yucca Fire Department and the BLM. Most calls are for brush fires along the roads or near the train tracks.

Fuels in the Dutch Flat area consist of scattered bushes and grasses. Fuels are considered light and scattered and the area is not likely to sustain large fires. Most fires in this area are 10 acres or less.

Both the Yucca Fire Department and the BLM respond to fire calls in the Hualapai Mountains, in which the fuels are heavy and continuous (oakbrush and trees). Large, sustained (catastrophic) fires are expected to occur every 60 to 80 years.

Public safety

Law enforcement services are provided by the Mohave County Sheriff's Department and the Arizona Department of Public Safety, which maintains a Highway Patrol station in Kingman and regularly patrols local and state highways.

Emergency hospital care is provided by Kingman Regional Hospital. The hospital provides acute care, including emergency services and a wide range of diagnostic services. The local fire department provides first response emergency service in the Yucca area. Emergency medical transportation is provided by River Medical, the local ambulance company.

Biological resources

All species were considered for evaluation. In the initial phase of analysis, the complexity of habitat types to be analyzed and the formidable task of analyzing impacts to hundreds and possibly even thousands of plant and animal species became evident. Therefore, the assumption was made that by carefully selecting key species using the habitat evaluation procedure analysis, a reasonably accurate estimate of impacts to wildlife and habitats as a whole could be made.

Five key animal species and their associated habitats (maps 2 and 6) were selected for evaluation of impacts from the proposed and no action alternatives. In addition, mountain lion, pronghorn, elk, goshawk, javelina, rosy boa, chuckwalla, Gila monster, Merriam's kangaroo rat, desert iguana, bats, peregrine falcon and other birds were considered for evaluation. The evaluation for each species is related to 10 habitat types within the exchange area (Appendix G and maps 2 and 6; Map 2 represents semi-desert-grassland habitat only and Map 6 represents all other habitats in the project area). The biological report (BLM 1997) prepared for this project is available for review at the BLM Kingman Field Office and the BLM Arizona State Office.

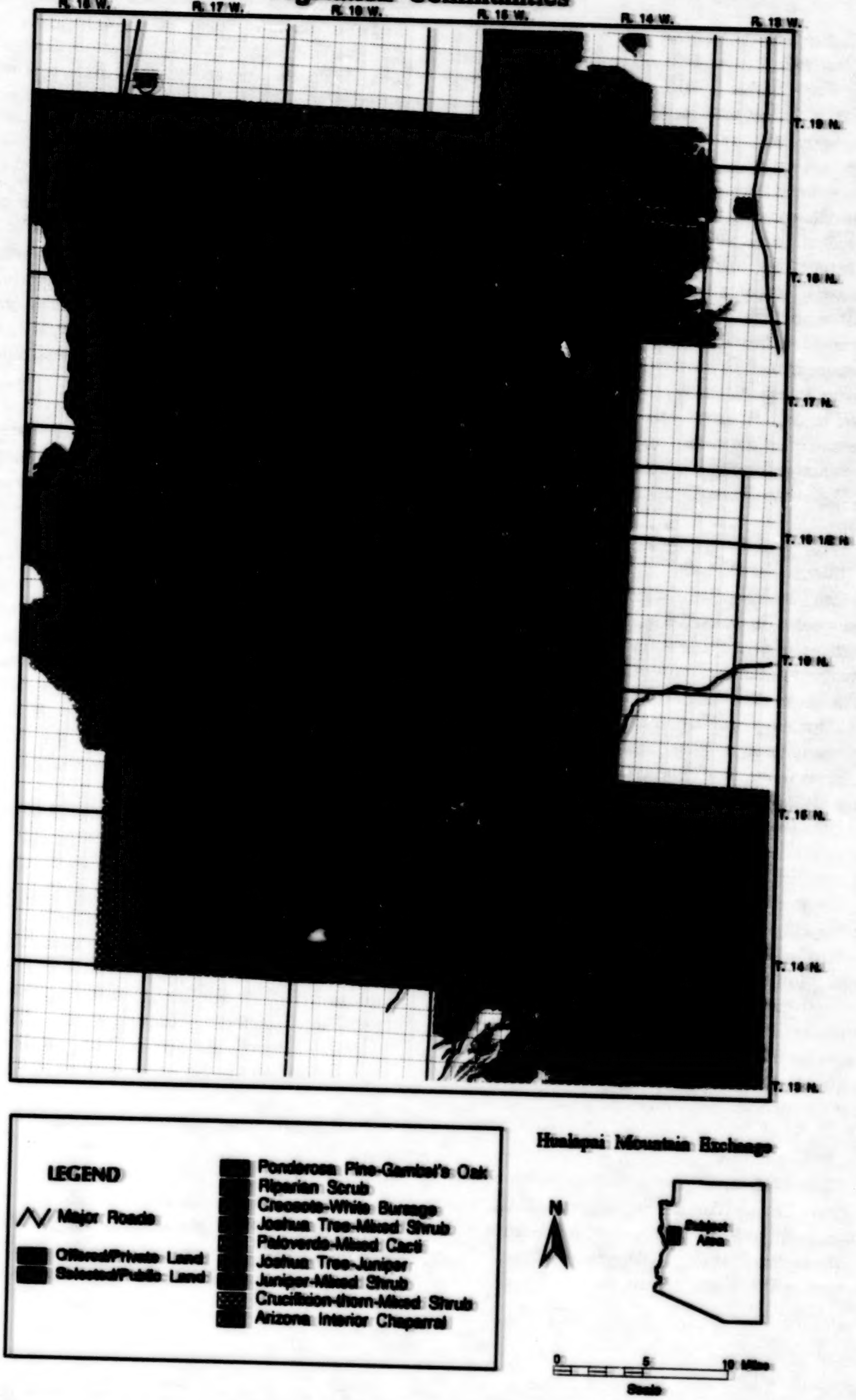
Because of the recent completion of endangered species consultation with the U.S. Fish and Wildlife Service (USFWS) on the Kingman RMP, a new species list was not requested from the Service. There are only two listed species in the exchange area — the Hualapai Mexican vole is listed as endangered and the Mexican spotted owl is listed by the Service as threatened. Because of the acquisition of habitat suitable for supporting Hualapai Mexican vole and Mexican spotted owls, Section 7 Consultation under the Endangered Species Act has been completed.

Species selected for evaluation

Mule deer

Occurring in all habitats throughout the project area, this species is most abundant in the crucifixion thorn-mixed shrub, Joshua tree-mixed shrub, Joshua tree-juniper, interior chaparral and ponderosa

Map 6. Hualapai Mountains/Dutch Flat Area Vegetation Communities



pine-Gambel oak communities, which provide a considerable diversity of shrub and forb species for food and cover.

Interior chaparral provides the most abundant and productive habitat for mule deer in the project area; the lower elevation habitat of creosote-white bursage provides limited habitat.

Gambel's quail

Gambel's quail occur in a variety of habitats generally below 5,500 feet elevation throughout the project area. These birds generally occupy stringers of favorable habitat along drainage systems and suitable habitat on upland areas and desert mountain slopes.

Habitats within the project area where quail are most abundant are the crucifixion thorn-mixed shrub, Joshua tree-mixed shrub, paloverde-mixed cactus, Joshua tree-juniper and riparian scrub habitat types. These communities provide quail with a diversity of shrub and forb species for food and cover.

Creosote-white bursage, Arizona interior chaparral and ponderosa pine-Gambel oak habitats are poor to marginal habitats for quail.

Hualapai Mexican vole

This thick-set, blunt-nosed, short-legged rodent with a short tail and small ears obscured by coarse, dark, cinnamon-brown fur was listed as endangered by the USFWS in 1987. Two known vole localities occur within the exchange area within approximately 330 acres of suitable habitat. The habitat at most vole locations reported from the Hualapai Mountains has been associated with the grass and riparian habitats in the ponderosa pine-Gambel oak habitat type. Some sites are associated with the upper pinyon-juniper or Arizona interior chaparral vegetation belt, usually adjacent to the forest habitats.

The 330 acres of ponderosa pine/Gambel oak habitat that would become public under the proposed action were proposed for acquisition under the Hualapai Mountains Research Natural Area/Area of Critical Environmental Concern (ACEC), designated under the Kingman RMP.

Mexican spotted owl

In 1993, the USFWS listed the Mexican spotted owl as threatened. There are approximately 330 acres of potential Mexican spotted owl habitat within the exchange area. Any of the timbered habitats in the Hualapai Mountains (mixed conifer or ponderosa pine-Gambel oak forest types) are considered potential habitat for this species.

Preferred habitat for this bird in the Hualapai Mountains is apparently limited to small, dense stands of mixed conifer and ponderosa pine forests and adjacent riparian habitat of Arizona black walnut, Gambel oak, big-tooth maple and New Mexican locust. The mixed conifer and ponderosa pine-Gambel oak forests in the Hualapai Mountains are extremely limited and patchy in distribution.

Desert tortoise

The Sonoran desert tortoise occurs east and south of the Colorado River and is not federally listed, although it is considered a sensitive species by both the BLM and AGFD. It is a former Category II candidate species under the Endangered Species Act.

Desert tortoise habitat within the project area is generally limited to elevations lower than 4,400 feet, mainly in the foothills and adjacent valleys of the Hualapai Mountains. Primary tortoise habitat types in the project areas include creosote-white bursage, Joshua tree-mixed shrub, Joshua tree-juniper, paloverde-mixed cactus and crucifixion thorn-mixed shrub.

Tortoise habitat throughout the Kingman Field Office area has been surveyed, monitored and designated as category I, II or III, all three of which occur within the exchange area. The categories of desert tortoise habitat designated by the BLM (BLM 1995) established goals for managing desert tortoises and their habitats, based on several criteria.

Briefly summarized, management of category I and II areas emphasizes maintenance of viable desert tortoise populations in areas where all Category I and most Category II conflicts are resolvable. Category III habitats are generally characterized by lower densities of desert tortoise in areas where habitat has been fragmented or otherwise degraded, or where land ownership patterns are such that effective management is difficult. This categorization process and the resulting management goals are a result of proactive management to conserve the Sonoran desert tortoise and its habitat and to avoid any programs or land use authorizations that would contribute to the need or justification for listing this species as endangered.

Some of the desert tortoise habitat that would become public under the proposed action (3,200 acres) was proposed for acquisition under the McCracken Desert Tortoise Habitat ACEC, designated under the Kingman RMP (BLM 1995).

White-margined penstemon

This BLM-sensitive plant species occurs within the Hualapai exchange area between Yucca and Dutch Flat, the only area in Arizona where white-margined penstemon occurs. It also occurs at one location in California east of Barstow and three locations around Las Vegas, Nevada.

The Arizona location on Dutch Flat is the single largest population of white-margined penstemon known. Even so, this population only extends in a band about 15 miles long and five miles wide along the western base of the Hualapai Mountains from Rock Creek on the northwest to Cow Creek on the southeast.

The range of this wildflower species on Dutch Flat is apparently limited by narrow ecological parameters. It is only found between 1,900 and 3,100 feet elevation and within the six-to-12-inch precipitation zone (NRCS 1996).

Also, the white-margined penstemon only grows on certain ecological sites -- the sandy loam upland and sandy bottom -- but not on the coarse sandy loam (limy) and the limy fans. The former ecological site which the white-margined penstemon occupies is finer textured and noncalcareous, whereas the latter unoccupied ecological site is coarser textured and calcareous. These two types of ecological sites alternate across Dutch Flat; thus, not all of this 15-mile range is habitat for the white-margined penstemon, nor does it occur continuously throughout this range.

Habitats in the project area for this species were rated as low, medium and high quality. Generally, habitat west of Alamo Road is of low to medium quality and habitat east of Alamo Road is medium to high quality (BLM 1997).

Species considered but not selected for evaluation

Mountain lion

In the project area, this species is more limited by prey than by habitat. Therefore, if habitat needs for prey species such as mule deer are provided, the assumption is that the future of the mountain lion in the project area is secure.

Pronghorn

The opportunity for conservation of pronghorn habitat in the project area is low. The habitat on public lands within the Antares area of the exchange area has been evaluated and determined to be primarily low-quality. One section is rated as moderate quality and another section of potential habitat was considered unsuitable due to its rough and rocky nature (Ockenfels, et al. 1996).

The number of pronghorn in all of Hualapai Valley north of Route 66 is estimated to be 25 animals (personal communication, Art Fuller, AGFD 1997).

Habitat in the Dutch Flat area, although considered historic, is marginal at best, a fringe habitat area, isolated and too small to support a viable population of pronghorn. Separated from existing populations by Kingman, highways, an interstate and railroad tracks, there is no opportunity for colonization of this area by pronghorn from habitat areas nearby.

Although there are several isolated location records regarding pronghorn on Dutch Flat, this habitat area was not rated by AGFD in its Statewide Evaluation of Pronghorn Habitat (Ockenfels, et al. 1996).

Considered to be too far from preferred grassland habitat, this area has not supported a pronghorn population since the early 1980s. The area is also separated from existing populations as described above.

Neither of these pronghorn habitat areas figure significantly in long-term survival of pronghorn in northern Arizona.

Elk, goshawk

These two species overlap in their use of higher elevation forest in the project area where suitable habitat is highly limited. Impacts to these two species from the alternatives will be similar to those described and analyzed for the Hualapai Mexican vole and the Mexican spotted owl. Conservation of habitat for the Hualapai Mexican vole and the Mexican spotted owl will likewise conserve habitat for elk and goshawk.

Javelina

Habitat requirements for this species greatly overlap those of mule deer. Impacts to this species from the alternatives will be similar as those described and analyzed for mule deer. Conservation of habitat for mule deer will likewise conserve habitat for javelina.

Rosy boa, chuckwalla, Gila monster

These species have habitat requirements that greatly overlap those of desert tortoise. Impacts to these three species from the alternatives will be similar to those described and analyzed for desert tortoise. Conservation of tortoise habitat will likewise conserve habitat for these species.

Merriam's kangaroo rat, desert iguana

These species are common throughout the creosote-white bursage, Joshua tree-mixed shrub and lower elevation xeroriparian plant communities in the project area.

Although development may displace some individuals, these species are considered common and will persist in adjacent available habitats as well as within the undeveloped portions of these private lands supporting suitable habitats within the project area.

Birds and bats

The project area is known to support a broad diversity of bird and bat life. Higher elevations and transition areas between habitat types are, in general, known to support rarer species and add more to the overall diversity of wildlife in the area than lower elevation habitats. Evaluation of Hualapai Mexican voles and Mexican spotted owls will document impacts to those species that utilize higher elevation habitats. Evaluation of mule deer, Gambel's quail and desert tortoise will document impacts to birds and bats that utilize transition and lower desert habitats.

Peregrine falcon

The project area contains no nesting habitat for this species. Falcons observed in this area are thought to be migratory.

AGFD provided a Heritage Data Management System species list for the project area. As there are no known records of Arizona necklace, Swainson's hawk, lowland leopard frog and roundtail chub in the project area, they have not been considered for further analysis.

Riparian resources

Riparian zones in the exchange area above 5,000 feet support plant communities of red willow, Arizona walnut, deer muhly, cattails and various rushes and sedges. Below 5,000 feet, Arizona ash is the dominant tree with some Goodding's willow, Fremont cottonwood, squaw waterweed, cattails and deer muhly.

The five known riparian areas within the exchange area and their approximate linear mileages are: on the west side -- Cow Creek (0.47 miles) and Beecher Canyon (0.77 miles); and on the east side -- Pilgrim Wash (less than one mile), Hibernia Canyon (4.6 miles) and Bull Canyon (4.9 miles).

Areas of critical environmental concern (ACECs)

There are three ACECs -- the Hualapai Mountains Research Natural Area/ACEC, McCracken Desert Tortoise Habitat ACEC and the White-Margined Penstemon Reserve ACEC -- within the exchange area. These ACECS were designated to conserve habitat for the Hualapai Mexican vole, desert tortoise and white-margined penstemon, respectively. Full descriptions of these ACECs are found in the approved Kingman RMP.

Recreation opportunities/access

There are no developed recreation sites on either the selected/public or offered/private lands. Recreational use within the project area is primarily seasonal hunting, recreational off-highway-vehicle driving (i.e., motorcycles, dune buggies, all-terrain vehicles, jeeps and other conventional vehicles), horseback riding, rockhounding, camping, picnicking, target shooting, mountain biking and hiking. With the exception of hunting, no hard data are available on the numbers of visiting recreationists. It is estimated that the portion of the project area in the Hualapai Mountains receives relatively more visitation, especially in the summer months, because of cooler temperatures.

The selected/public and offered/private lands in Dutch Flat and the McCracken and Hualapai mountains are within AGFD Hunt Unit 16A and selected/public lands in Hualapai Valley are in Unit 15B. In general, hunting on project area lands at either location is considered light (Tom Freeguss, AGFD, personal communication).

Most hunting in the Dutch Flat and McCracken Mountain areas is for mourning doves and Gambel's quail around scattered livestock water sources. Hualapai Valley hunting pursuits would be for similar species and limited numbers of pronghorn.

Within the Hualapai Mountains, hunting for quail and dove still occurs at the lower elevations, but a considerable amount of desert mule deer hunting takes place throughout this range. A limited amount of elk hunting may also occur.

Recreational off-highway-vehicle driving for pleasure or other pursuits (photography, etc.) is probably the second most popular recreational activity. Selected/public lands in the Dutch Flat area are crossed by no fewer than 27 roads, or segments of roads, totaling about 107 miles, traditionally used for various activities. Eleven road segments, totaling about 16 miles, also cross selected/public lands in the Hualapai Valley area. This estimate does not include those roads formally dedicated as subdivision roads or other thoroughfares such as Alamo Road or Antares Road. With little exception, public use of these routes on the selected/public lands has historically involved coincidental trespass on adjacent private lands due to the checkerboard pattern of land ownership.

The roads and trails which cross selected/public lands can be characterized as two-track trails or formerly graded roads which have not been maintained. In some cases, these routes have become obscure due to lack of use, soil erosion or vegetation overgrowth. Other routes appear to receive light to moderate vehicle use.

Fifteen road segments, totaling about 78 miles, cross the offered/private lands in the Hualapai Mountains and in south Dutch Flat. Public use of these routes has historically taken place despite the consequent need to trespass on private land. As with the roads on the selected/public lands, these routes are mostly characterized as two-track trails or formerly graded roads which have not been maintained.

A complete inventory report of all roads affected by the proposed action is available at the BLM Kingman Field Office upon request.

Realty

Rights-of-way

The 30 rights-of-way in the Dutch Flat area are all west of Alamo Road; there are seven rights-of-way in the Antares area (Appendix H). These rights-of-way, which cross public lands and the Santa Fe Pacific Railroad and other private lands, are most typically for utilities and roads and are jointly managed by the BLM and the private land owners.

Of the 14 easements on the offered/private lands, nine are held by the federal government and five are held by utility companies.

McCracken Mine Road

The exchange proponents have applied to Mohave County for abandonment of an approximately 6.5-mile portion of McCracken Mine Road. This portion runs south from the Alamo Road (T. 15 N., R. 16 W., sec. 1) to the Planet Ranch Road (T. 14 N., R. 15 W., sec. 5). Mohave County is concerned about access to the McCracken Mountains and the McCracken Mine (T. 13 N., R. 15 W., sec. 24). If this abandonment is approved, the access issue could be accommodated by an alternate route to the McCracken Mountains and mine via the Planet Ranch Road. The route would run from the Alamo Road west approximately three miles to McCracken Mine Road and south about 10 miles on McCracken Mine Road to the McCracken Mine.

Recreation and Public Purpose (R&PP) lands

The RMP designated areas near the exchange area as recreation and public purpose (R&PP) lands are identified as available for local and state governments and qualified nonprofit organizations. Agencies and organizations can use these lands for parks, schools, fire stations, etc. Designated for R&PP purposes are 160 acres near Yucca in T. 17 N., R. 18 W., sec. 12, W½W½, NE¼NW¼ and sec. 36, SE¼ and 320 acres near Antares in T. 24 N., R. 14 W., sec. 30, S½. These R&PP lands are not part of the exchange proposal, but may be affected because of their proximity to the exchange.

Utility corridors

Utility corridors maintain routes for large transmission facilities to minimize adverse environmental impacts and the proliferation of separate rights-of-way. The following corridors are within the exchange area.

– San Juan Crossover: a one-mile-wide gas pipeline corridor; an approximate 6½-mile length is within the selected/public lands; a one-mile length is within the offered/private lands

– El Paso: a two-mile-wide gas pipeline corridor; an approximate six-mile length is within the selected/public lands

– Mead to Phoenix: a one-mile-wide electric transmission corridor; approximately two miles are within the selected/public lands

– Bagdad Lateral: a two-mile-wide gas pipeline west of the Mead-to-Phoenix corridor; approximately three miles are within the offered/private lands

Land tenure adjustments

A stated RMP goal (page 18) is to "adjust land tenure as needed to improve federal land management effectiveness, improve resources and provide lands for public and private uses."

Cultural resources

On public (BLM) lands in the Hualapai Mountains and foothills, there are numerous cultural resources including petroglyphs, shrines, hunting and gathering camps, mines, ranches and homesteads. In these mountains and foothills, there is a high probability that similar cultural resources exist on the private lands that would be acquired by the BLM. The Hualapai Mountains and foothills are sacred to the Hualapai Tribe.

The Dutch Flat area is a valley with few natural and cultural resources. The most critical missing resource is surface water. In the 19th century, wagonloads of water had to be brought from the Colorado River for construction of the railroad in the northwestern part of this area. The lack of water and other natural resources is probably the reason the area has the lowest known density of cultural resources in northwestern Arizona.

The few prehistoric cultural resource properties found are near the edges of the valley where the topography changes from flat to hills. The prehistoric properties are lithic (stone) procurement sites and temporary camps connected with hunting and gathering activities. The two main types of historic properties are transportation sites (consisting of roads and a railroad and associated features) and World War II military remains associated with the aerial gunnery operations from the auxiliary airfield in Yucca.

The Antares area, in the Hualapai Valley, historically had water flowing through its central part. Wells built by early settlers in the late 19th and early 20th centuries greatly impacted several springs which supplied this water. As a result of the water and sand dunes in the valley, conditions were right for both prehistoric and historic Native American groups to gather a variety of wild plants. Seasonal camps typically have roasting pits with groundstone, ceramic and lithic artifacts.

Historic Anglo use of the valley was mainly for travel and ranching. The valley also has World War II remains, mostly .50-caliber machine gun bullets, casings and clips, of which there are probably several hundred thousand. Between December 1942 and July 1945, 35,000 gunners were trained in the Kingman area, primarily over the Hualapai and Dutch Flat valleys.

Mineral resources

A mineral report describes the local geology and mineral potential of both offered/private and selected/public lands in detail (Mineral Potential Report for the Hualapai Mountains Exchange, Mohave County, Arizona, Conway, et al. 1997).

In summary, the Hualapai Mountains have some mineral potential for metallic minerals (copper, tungsten, gold, etc.), of which there has been some historical development, particularly tungsten. Current market conditions render these deposits uneconomical and current activity in the region is limited to prospecting.

The valley area, Dutch Flat, has little or no potential for metallic minerals, but does have some potential for mineral materials -- sand, gravel and decorative rock as common construction materials. These resources have been developed primarily along Interstate 40, where sand and gravel have been mined for highway construction and maintenance, as well as for some minor local demand for other construction projects.

Soil erosion potential

The lands within the exchange area were assigned soil erosion hazard ratings of slight, moderate or severe, using the unpublished soil survey report of Southern Mohave County (1996). Soil erosion hazard ratings are based on factors such as surface soil texture, surface soil structure, permeability, presence of surface coarse fragments (gravel, stones, etc.) and slope. These factors are used in the Natural Resource Conservation Service Universal Soil Loss Equation and are used to predict average annual soil loss from water erosion.

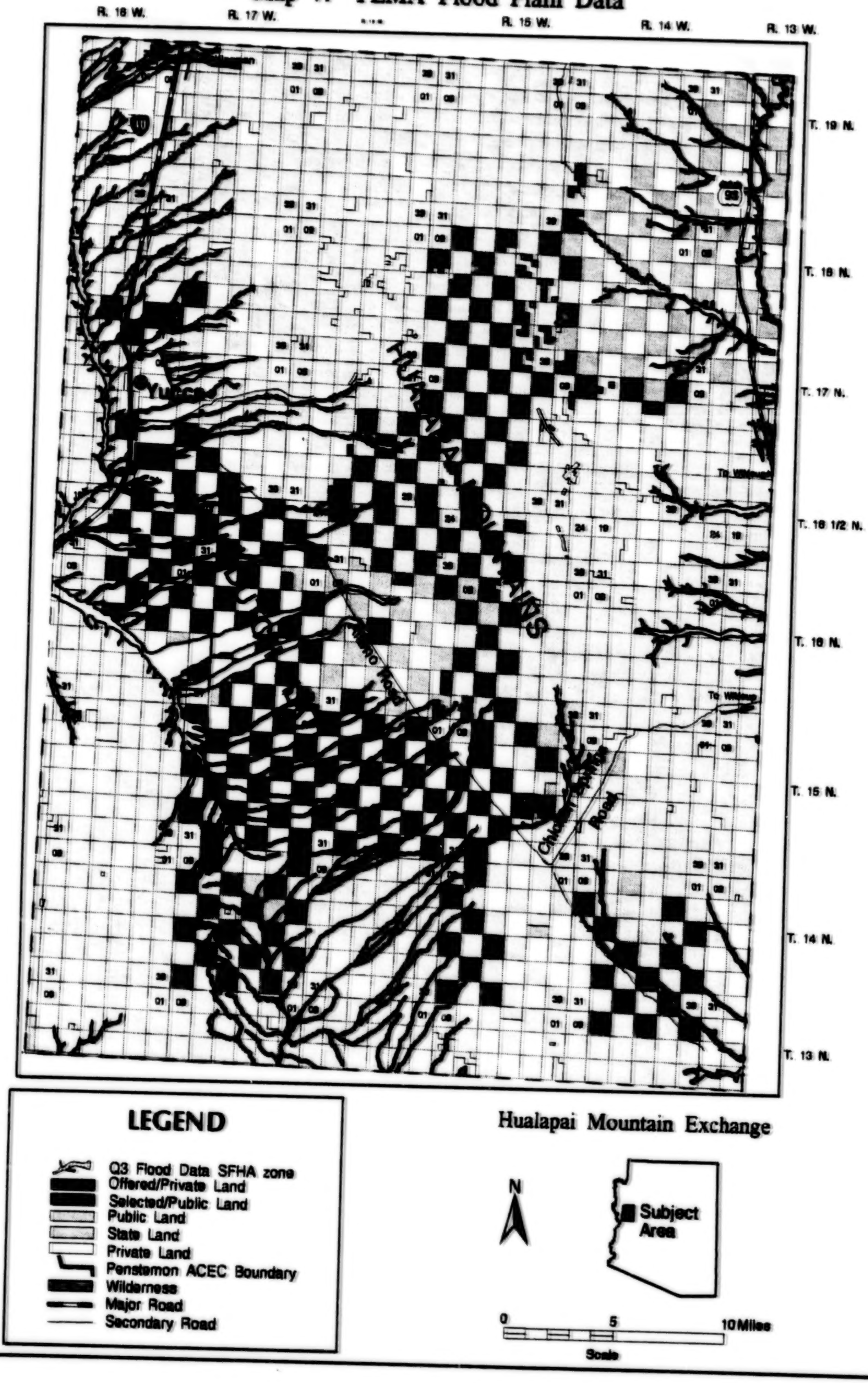
An erosion rating of slight was assigned to 10,800 acres of the offered/private lands and 28,990 acres of the selected/public lands. An erosion rating of moderate was given to 17,300 acres of the offered/private lands and 37,700 acres of the selected/public lands. An erosion rating of severe was determined for 42,879 acres of the offered/private lands and 1,300 acres of the selected/public lands.

Areas with slight erosion potential are found on the fairly flat areas in the valley bottom. In the foothills are moderate erosion potential areas, immediately below the western base of the Hualapai Mountains, and in the foothills east and west of the McCracken Mountains. The areas with severe erosion potential occur mainly on the steep slopes of the Hualapai Mountains.

Floodplains

Map 7 depicts Floodplain Zone A, regardless of land status. The information was derived from flood insurance rate maps published by the Federal Emergency Management Agency (FEMA). Zone A delineates areas of 100-year flood.

Map 7. FEMA Flood Plain Data



Chapter 4 -- Environmental consequences

This chapter contains the information used to compare the alternatives as presented in Chapter 2, Table 1. It is organized by issue with discussions of impacts of each alternative.

Critical elements that will not be impacted

Twelve items (critical elements) must be considered in every environmental analysis action proposed by the BLM (BLM Manual 1790-1). Of these, wild and scenic rivers, wilderness, air quality, water quality, prime/unique farmlands and hazardous materials are not present in the exchange area or will not be impacted by the proposed action or alternatives.

Hazardous material

An environmental site assessment was done for the offered/private and selected/public lands proposed in this exchange to determine areas of hazardous material; the BLM will not accept or lands containing hazardous material. The assessment documents all appropriate inquiries "into the previous ownership and uses of the property consistent with good commercial or customary practice" (42 U.S. Code §9601[35][B]). The assessment results show a potential hazardous material site on one selected/public land parcel, a mill, now closed, in T. 16 N., R. 17 W., sec. 30, S½.

Appropriate inquiries for the proposed exchange consisted of record reviews and site reconnaissance. Environmental and regulatory records were searched to determine if potential hazardous material contamination existed on the subject properties or nearby lands, e.g., active or closed landfills, mines, ore mill sites, underground fuel storage tanks or industrial, commercial and agricultural operations.

The environmental site assessment considers both historical and contemporary uses. Background information about geologic, hydrologic and topographic features of the affected lands was also researched to determine possible contaminant pathways. During the site reconnaissance, the exchange properties and any structures on or near these properties were visually and physically inspected. The sense of smell is also important in these investigations, as chemical odors may be present when there is no visible evidence of toxic corruption. Potential sources of hazardous material contamination were noted. Possible chemical-contaminated soil and asbestos-containing materials were found. Samples from each suspected site received laboratory analysis, according to U.S. Environmental Protection Agency (EPA) protocol. None of the samples contained hazardous materials, but one soil sample indicated a small amount of petroleum contamination.

Other critical elements

The other critical elements -- areas of critical environmental concern, cultural resources, Native American religious concerns, threatened or endangered species and riparian areas -- are being considered within the content of the EIS.

Issues

Ranching

Due to the wide range of effects anticipated by the proposed exchange on the allotments involved, this section will be divided into two categories, describing the general effects on ranching and each ranch.

General effects

This section will discuss the effects on the selected/public and offered/private lands on all ranches, including grazing administration, people and cattle (damage to ranch developments, complaints, harassment of livestock, etc.) and compensation for developments (fences, corrals, etc).

Grazing administration

Under the proposed action and equal appraised value alternatives, grazing administration of the selected/public lands would go to the proponents with the BLM taking over administration of the offered/private lands, managing them for multiple use. The Kingman RMP designates grazing as one of these multiple uses; changes in designated uses would require an environmental review in consultation, cooperation and coordination with affected allottees and interested publics. BLM grazing permits/leases are generally issued for 10 years. Administrative review processes are provided for in the BLM grazing regulations (43 Code of Federal Regulations, Subpart 4100). Construction, placement or reconstruction of range improvements on BLM lands are subject to approval by the BLM, a process that usually requires 30 to 90 days. Placement of supplemental feed on BLM lands is also subject to approval. Interested publics may also be involved on BLM lands and, under certain circumstances, have the right to protest and appeal actions affecting grazing management. In this process, the resolution of appeals can take up to five years.

The private/offered lands are leased for grazing on the Chicken Springs, Hibernia Peak A and B units and La Cienega allotments. The tenure of these leases is generally five years and can be terminated upon a 90-day written notice. A set fee is paid for these leases, whereas under the BLM permit, the rancher may apply for a lesser amount of livestock than the full permitted amount and, if approved, would only be charged for the amount for which the rancher applied. Construction or placement of range improvements (fences, watering facilities, etc.) and placement of supplemental feed on the currently leased private/offered lands has been allowed under the private lease agreements with no prior approval.

Under the proposed action and equal appraised value alternatives, the rancher would be given title to range improvements on the offered/private lands under Section 4 range improvement permits and would be responsible for their maintenance and ensuring long-term ranching use of the offered/private lands and associated range improvements. The BLM would see an increase of approximately $841 per year in grazing receipts under the proposed action and $1,633 under the equal appraised value alternatives due to the additional permitted livestock (Table 3).

The proponents would offer to lease the selected/public lands to the ranchers for grazing, allowing the use of range improvements on these lands. Whether these lands are leased or not, under Arizona's Fence-No Fence Districts (Open Range) Law, livestock would have access to them unless and until they are fenced; however, forage would not be allocated from these lands.

The selected/public lands are proposed to be sold in 40- and 160-acre parcels, which means an increased number of land owners within the ranch. The proponents retain the grazing rights. The rancher could continue to lease the grazing until the landowner fences the property from livestock access. In the long term, as each landowner builds fences, the overall number of cattle that the rancher could graze would decrease. If the exchange does not occur, grazing administration would remain as it is. The offered/private lands would remain in private ownership and be sold in 40- and 160-acre parcels and the selected/public lands would remain in public ownership, managed for multiple use. Most of the selected/public lands are bordered or surrounded by private lands proposed for sale in 40- and 160-acre parcels. As these parcels are fenced by landowners, the public lands will see reduced access for grazing and the long-term integrity of the ranch will be compromised.

People and cattle

All of the ranches have some "private uncontrolled" lands where people currently or potentially will reside. The overall effect of the land exchange on each of the allotments would vary according to the amount of selected/public and offered/private lands within each allotment.

Current effects of people living within a ranch boundary include a decrease in grazable lands as they are fenced off from livestock, vandalism of range improvements, livestock death losses from vehicles and harassment of livestock. Generally, these factors associated with private lands decrease the efficiency of the ranching operation and the value of the ranch. Thus, as areas are blocked into public ownership, these problems lessen and therefore increase the integrity of the ranch. Under the proposed action and equal appraised value alternatives, the ranches with areas to be blocked into public ownership can expect to have fewer of the above-stated problems than areas blocked into private ownership. Under the no action alternative, the land sales would be over a much broader area and the problems associated with people living within a ranch would continue in the intermingled ownership pattern.

Compensation for ranch developments

The ranchers would be compensated for the ranch developments on selected/public lands. Ownership of these developments would be transferred with the selected/public lands but remain available for use if the permittee elects to lease these lands.

Easements for range developments, such as allotment boundaries needed to ensure the integrity of the ranch, are discussed below for each ranch. If perpetual easements are given, the rancher will have continued use of the development, so no compensation will be needed. Appendix J lists range improvements on the selected/public lands.

Effects to each ranch

Each ranch would undergo changes in percentage of private and public land ownership (maps 8 and 9).

Table 3. Grazing management changes (* based on 1997 rate of $1.35 per AUM)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hackberry	1,280	0	- 1,280	- 128	- $172.80
Walapai Ranch	5,195 (4,556)	0	- 5,195 (- 4,556)	- 482 (- 423)	- $650.70 (- $571/05)
Cedar Canyon	3,199 (0)	0	- 3,199 (0)	- 287 (0)	- $387.45 (N/A)
Boriana Unit B	652 (640)	0	- 652 (- 640)	Ephemeral	N/A
Hibernia Peak Unit A	0	11,139	11,139	1,104	$1,490.40
Hibernia Peak Unit B	0	2,032	2,032	220	$297.00
Diamond Joe	0	1,010	1,010	84	$113.40
Big Sandy	0	2,205	2,205	228	$274.05
Boriana Unit A	2,082 (640)	972	- 1,110 (332)	- 114 (24)	- $153.90 ($32.40)
Happy Jack Wash	4,528 (3,200)	30	- 4,498 (- 3,170)	- 205 (- 144)	- $276.75 (- $194.40)
La Cienega	37,417 (35,518)	34,692	- 2,725 (- 826)	- 60 (- 18)	- $81.00 (- $24.30)
Chicken Springs	7,504	16,512	9,008	288	$388.80
Crossman Peak	7,050 (6,730)	642	- 6,408 (- 6,087)	Ephemeral	N/A
Totals	68,907 (60,068)	69,234 (69,234)	+ 251 (+ 9,167)	+ 648 (+ 1,235)	+ $841.05 (+ $1,633.50)

(NOTE: Figures in parentheses represent figures under the equal appraised value alternative)

Big Sandy allotment

Proposed action

Approximately 2,205 acres of offered/private lands would become public. These lands, not leased by the rancher, support forage for approximately 19 CYL.

Livestock numbers on this allotment would increase from 655 CYL to 674. The amount of public lands would increase from 74 to 77 percent; however, forage allocated from public lands would remain at 89 percent. At the current federal grazing fee rate (FY98 = $1.35/AUM), BLM grazing receipts would increase by $274.05 per year.

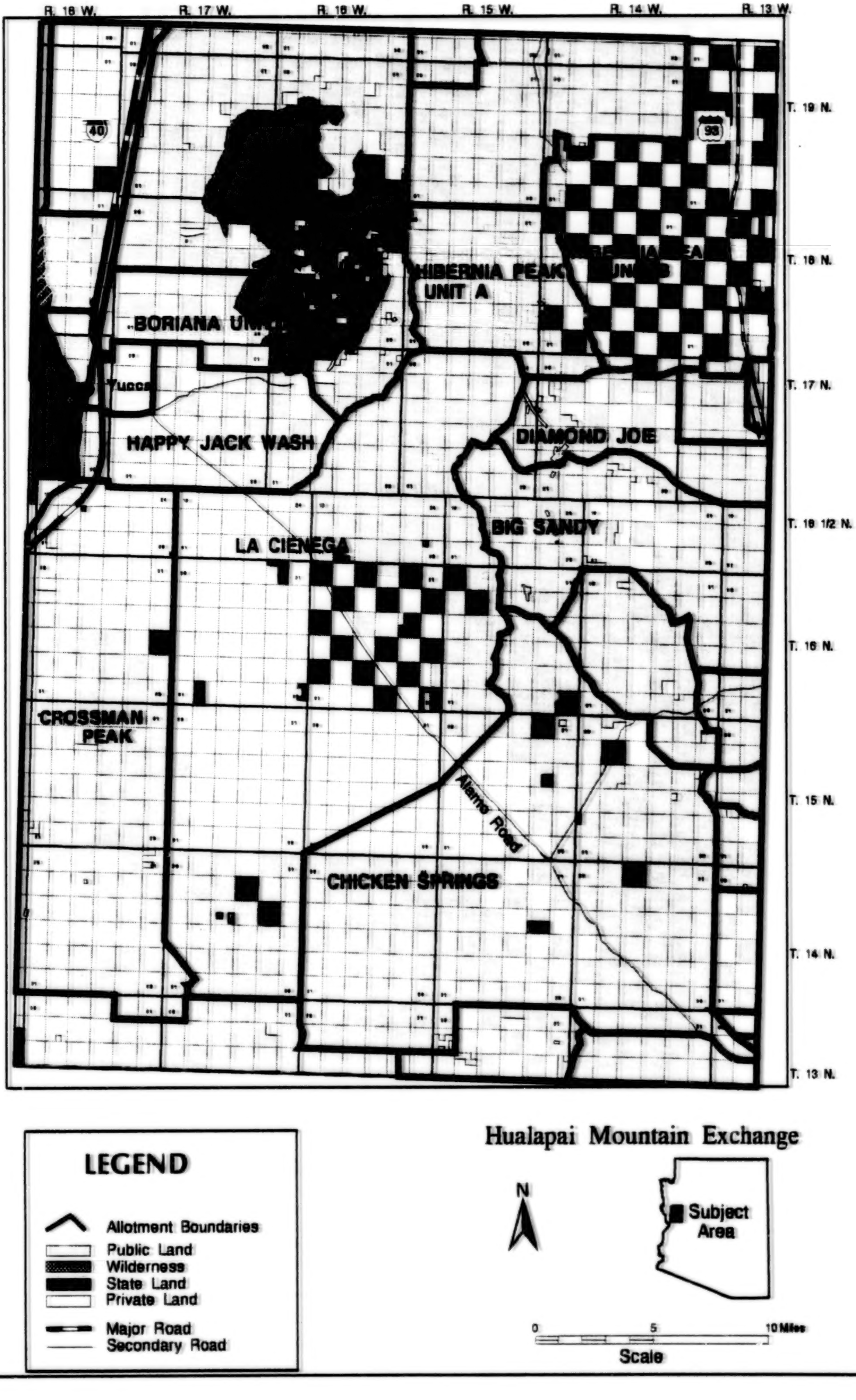
Equal appraised value

The impacts would be the same as those under the proposed action.

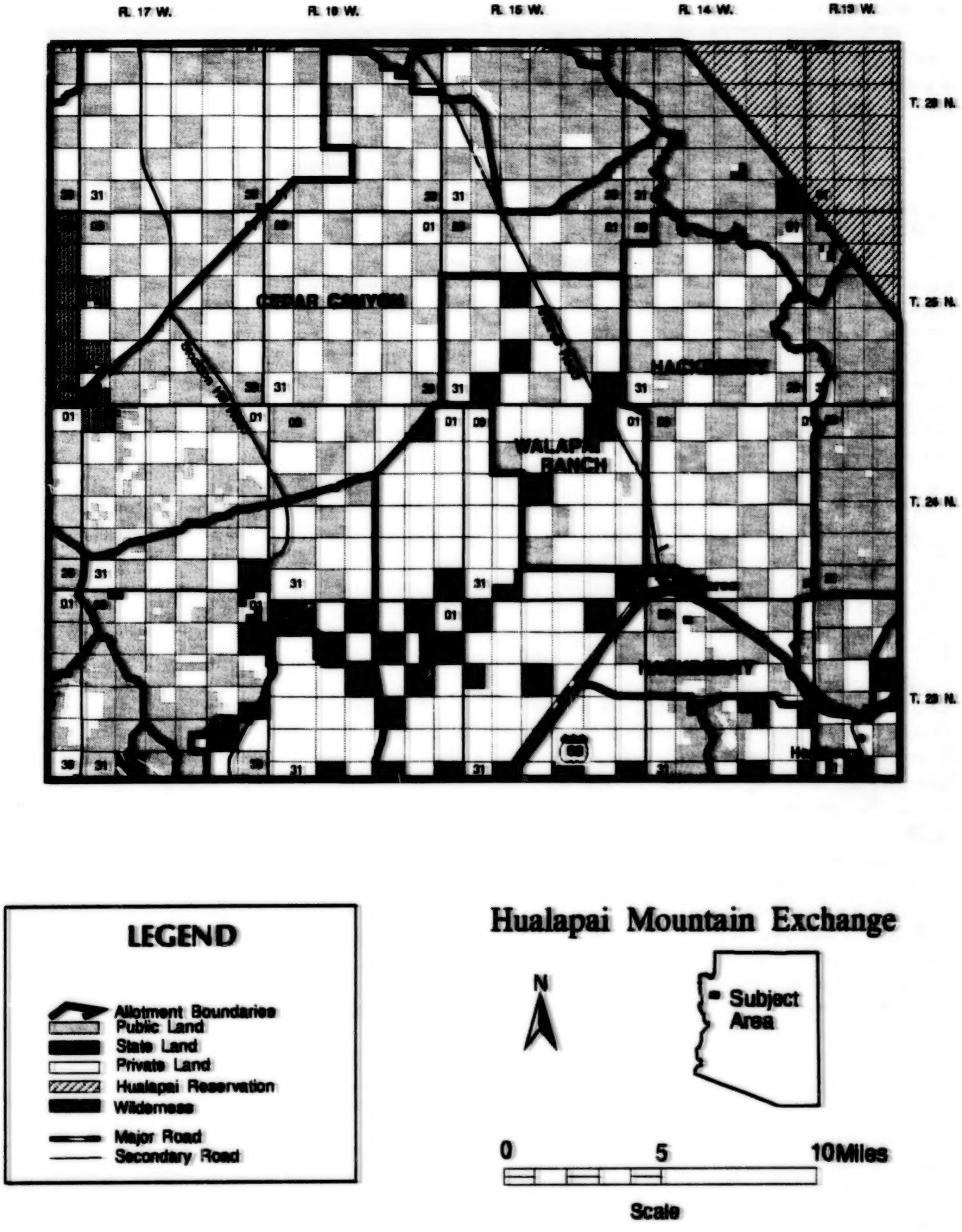
No action

The offered/private lands would remain in private ownership and the livestock numbers and percentage

Map 8. Grazing Allotments- Hualapai Mountains/Dutch Flat Area
Proposed Change in Land Status



Map 9. Grazing Allotments- Antares Area
Proposed Change in Land Status



Hualapai Mountain Exchange

of public lands would remain unchanged. Due to the remoteness of these private lands, it is not anticipated that they would be developed in the foreseeable future.

Boriana Unit A allotment

Proposed action

Approximately 2,082 acres of selected/public lands in the western portion of this allotment support approximately 13 CYL, which would become private. These lands make up seven percent of the land upon which forage is allocated and support six percent of the cattle. There are 972 acres of offered/private lands in the allotment which produce forage for approximately six CYL. These lands, which are not leased by the rancher and therefore do not currently have forage allocated from them, would become public and managed for multiple use.

Based on this, there would be a net loss of 1,110 acres of BLM lands in the allotment, which supports approximately seven CYL. The amount of BLM lands would decrease from 74 to 71 percent. If the permittee leases these lands from the proponents, the amount of livestock on the allotment would increase from 202 CYL to 208 as a result of the increased amount of BLM and private controlled lands. This would decrease the forage allocated from BLM lands in the allotment from 94 to 88 percent. At the current federal grazing fee rate, this would equate to a $111.40 per year reduction in BLM grazing receipts.

If the selected/public lands are not leased, the amount of cattle on the allotment would be reduced from 202 CYL to 195 and the amount forage allocated from BLM lands would remain at 94 percent. At the current federal grazing fee rate, this would equate to a $107.19 per year reduction in BLM grazing receipts.

Three livestock watering facilities – the Section 30 drinker, the Willow Spring pipeline and the Willow Creek endwater – are on selected/public lands in this allotment. One mile of the Duncan and Herridge Division Fence separating this allotment from the Walnut Creek allotment to the north is also on selected/public lands.

If the permittee declines to lease the selected/public lands, the use of the range improvements on them may be denied. In this case, the remaining range improvements would be sufficient to maintain authorized livestock numbers; however, the loss of the two watering facilities would increase livestock concentrations at other watering facilities and may result in uneven distribution of livestock.

As a result of this action, the increase in development in this allotment (nine sections of moderately developed private lands are arranged in a checkerboard pattern in the allotment) and the amount of complaint calls would require more time for administration of the allotment by the BLM.

Equal appraised value

The impacts would be the same as those under the proposed action except that there would be 640 acres of selected/public lands supporting approximately four CYL which would become private. These lands represent 2.1 percent of the land on which forage is allocated and support two percent of the cattle. Therefore, there would be a net increase of 332 acres of BLM lands in the allotment, which supports approximately two CYL. This would increase the amount of BLM lands from 74 to 75 percent.

If the permittee leases the selected/public lands from the proponent, the amount of livestock on the allotment would increase from 202 CYL to 208 as a result of the increased amount of BLM- and private-controlled lands. This would decrease the percentage of forage allocated from BLM lands from 94 percent to 92; however, the increase in livestock numbers would increase BLM grazing receipts by $56.70 using the current federal grazing fee rate.

If the selected/public lands are not leased, the amount of livestock on the allotment would increase from 202 CYL to 204 as a result of the increased public lands. The amount of forage allocated from BLM lands would remain at 94 percent. At the current federal grazing fee rate, this would equate to a $29.70 increase in BLM grazing receipts.

One mile of the Duncan and Herridge division fence separating this allotment from the Walnut Creek allotment to the north is on selected/public lands.

No action

The selected/public lands would remain in public ownership and the offered/private lands would remain in private ownership. There would be no adjustment in total number of AUMs of specified livestock grazing. Private uncontrolled lands would continue to be developed and the amount of urban interface conflicts would continue to rise as the population grows.

Boriana Unit B allotment

This allotment is designated as ephemeral and all forage is allocated from BLM lands.

Proposed action

Approximately 652 acres of selected/public lands would become private and public use grazing would remain at 100 percent. BLM lands within the allotment would be reduced from 85 percent to 79 and private uncontrolled lands would increase from 1,791 acres to 2,443. Since this allotment is designated as ephemeral, the amount of revenue from grazing cannot be predicted; however, it is not anticipated that the decreased BLM lands would reduce revenues.

The only livestock handling facility on this allotment – Corral Number Three – is on the selected/public lands. If the permittee loses control of this corral, it would be necessary to construct a similar facility on BLM lands. There is also 1.5 miles of the Herridge-Smith and Potter Boundary Fence separating this allotment from the Happy Jack Wash allotment. Currently, there is no development in this allotment. No significant impact to livestock management under this alternative is anticipated.

Equal appraised value

The impacts would be the same as under the proposed action except that 640 acres of selected/public lands would become private. This would increase the amount of private uncontrolled lands from 1,791 acres to 2,431.

One mile of the Herridge-Smith and Potter boundary fence and a livestock handling facility – Corral Number Three – are on selected/public lands.

No action

The selected public lands would remain in public ownership. It would not be necessary to construct and permit a new livestock handling facility.

Cedar Canyon allotment

Proposed action

Approximately 3,199 acres of selected/public lands would become private, reducing the amount of BLM lands in this allotment from 55 percent to 51. If these lands are leased from the proponents for grazing, the amount of forage allocated from BLM lands would be reduced from 56 percent to 52 and the livestock numbers would remain at 597 CYL. At the current federal grazing fee rate, this would equate to a $387.45 per year reduction in BLM grazing receipts.

If these lands are not leased, the amount of forage allocated from public lands would be reduced from 56 percent to 55 and the amount of livestock would be reduced from 597 CYL to 567. BLM grazing receipts would be reduced by $456.30. The loss of 30 CYL would result in an estimated decrease of $24,000 to $36,000 of the sale value of the ranch based on local lending policies of several banks of $800 to $1,200 per CYL. Also, based on an 83 percent calf crop at $400 per calf per year, a loss of approximately $10,000 in annual calf sales would be expected. The permittee at present holds deeded grazing rights to most of the private land on his allotment.

Under this alternative, the permittee would be compensated for interest held in range improvements on selected/public lands. All improvements on the selected/public lands within this allotment are authorized by cooperative agreements, i.e., the improvement has a shared cost and ownership between the permittee and the U.S. The permittee would be compensated for two miles of allotment boundary fence, but without a perpetual easement for this fence or a reserved easement in the name of the U.S., he will be unable to control his livestock to his allotment.

Under current regulations, a permittee could lose BLM grazing privileges if he is unable to control his livestock. It would not be possible to change the allotment boundary fence of this allotment to non-selected BLM lands. The permittee would be compensated for three miles of pasture fence, but without a perpetual easement for this fence or a reserved easement in the name of the U.S., he will be unable to prevent drift of livestock from one pasture to another. The Valley-Marshal pasture fence could be moved to non-selected public lands. Moving this fence would require seven miles of new fence at a cost to the permittee of $24,500. The permittee would be compensated for the Hennifen (aka Marshall) tank, but access to this water facility could be denied if he does not get a perpetual easement from the proponents or a reserved easement in the name of the U.S. A new stock tank could be constructed on non-selected BLM lands one mile to the northeast or one mile to the east.

Urban interface problems are not expected in the near future on this allotment because of the deeded grazing rights held by the permittee on most of the private lands and because most subdivision activity is concentrated on the Walapai Ranch allotment to the south. Without perpetual easements for range improvements and long-term grazing leases from the proponents, it is likely that the proposed exchange will adversely impact his grazing management and his source of income from ranching.

Equal appraised value

The 3,199 acres of selected/public lands would remain under BLM management and administered for multiple use.

No action

The 3,199 acres of selected/public lands would remain under BLM ownership and administered for multiple use.

Chicken Springs allotment

Proposed action

Approximately 7,504 acres of selected/public lands supporting forage for 19 CYL would become private and approximately 16,512 acres of offered/private lands would become public.

The selected/public lands make up six percent of the allotment and provide forage for 19 CYL; the offered/private lands make up 12 percent of the allotment and support forage for 55 CYL. Based on this, there would be a net gain of approximately 9,008 acres of BLM lands and 36 CYL under BLM administration, increasing the amount of BLM lands in the allotment from 70 percent to 77.

If the rancher leases the selected/public lands from the proponents, the amount of forage allocated from BLM lands would increase from 72 percent to 81, amounting to an increase of $583.20 in BLM grazing receipts based on current grazing fee rates. The amount of livestock on the allotment would remain at 400 CYL.

If the rancher does not lease the selected/public lands, the amount of forage allocated from BLM lands would change from 72 percent to 91 and the amount of livestock on the allotment would be reduced to 357 CYL. This loss of 43 CYL would result in a decrease in the borrowing capacity of the ranch and thereby reduce its value by an estimated $34,400 to $51,600, based on current lending practices of $800 to $1,200 per CYL.

Approximately 8,480 acres of private lands are intermingled with the selected/public lands in the northwestern part of the allotment, which the proponents are subdividing. It can be anticipated that people/livestock conflicts in this area would eventually make it unsuitable for raising livestock. Should this occur, the loss of the 43 CYL and resulting loss of the value of the ranch would be realized.

By comparing the current private grazing lease rate for the offered/private lands of $1,529 per year to the projected cost of the $891 under BLM administration of the 55 CYL, the savings to the ranch would be $638 per year.

Approximately 10 miles of an allotment boundary fence are on the selected/public lands and the private lands being subdivided in this allotment. The permittee would be compensated for his interests in the 6.5-mile portion of the fence on the selected/public lands. If these lands are not leased by the rancher, or when they becomes unsuitable for raising livestock, it would be necessary to realign the allotment boundary, requiring construction of 17 miles of fence at an approximate cost of $59,500 at current prices, which in the future may cost as high as $90,000.

There are also approximately five miles of pipeline on the selected/public lands and the private lands being subdivided, of which one mile is on selected/public lands. This pipeline supplies water to much of the western portion of the allotment. The permittee has requested that an easement be granted for its present location on selected/public lands so that it would maintain an adequate drop in elevation to sustain gravity flow.

If the selected/public lands are not leased for grazing, the permittee would be required to realign the pipeline within the easements provided for access and utilities to the subdivided lands. This would require construction of approximately 5.5 miles of pipeline. At current prices, this would cost the permittee approximately $24,960 and future costs could be as high as $30,000.

Equal appraised value

The impacts would be the same as those under the proposed action.

No action

The 7,504 acres of selected/public lands would remain under BLM ownership and administered for multiple use. The 16,512 acres of offered/private lands would remain private and be subdivided. In addition to these offered/private lands, the 8,480 acres of private lands in the northwestern portion of the allotment would yield a total of 24,992 acres to be subdivided. These lands provide forage for approximately 79 CYL.

Since residential development under this alternative would be spread over more than half of the allotment and interspersed with BLM lands, it is anticipated that grazing would continue throughout the allotment. Some of the private lands would be fenced from livestock; however, access by livestock via adjacent BLM lands would remain to the unfenced private lands. Therefore, the reduction to the available forage would not be great. The widespread urban interface problems would greatly hinder the efficiency of the ranching operation and increase the BLM's administration of this allotment.

The boundary fence on the selected/public lands would remain on BLM lands. Where the fence is on private lands being subdivided, it would remain within the easement held by the U.S. as long as it is necessary or beneficial for, or in connection with, the administration or use of BLM lands surrounding or adjacent to the private lands on which the fence lies.

The New Well pipeline would remain at its current location as long as a grazing lease is in effect for the private lands upon which it is located. If this lease is terminated, the permittee may apply to re-route it onto adjacent BLM land, provided easements for corner crossings on private lands could be obtained. This would require the construction of approximately 4.5 miles of pipeline at a cost of $21,600, at current prices).

Crossman Peak allotment

Proposed action

Approximately 642 acres of offered/private lands would become public and approximately 7,050 acres of selected/public lands would become private. This would result in a net loss of approximately 6,407 acres of BLM lands, a reduction from 80 percent to 75. This allotment is designated as ephemeral with 100 percent of the forage allocated from public lands. If the rancher chooses to lease the private lands resulting from this exchange, the amount of forage allocated from public lands would be reduced to 93 percent. If these lands are not leased, the amount of forage allocated from public lands would remain at 100 percent. Since this allotment is designated as ephemeral, the amount of revenue from grazing cannot be predicted; however, it is not anticipated that the decreased BLM lands would reduce revenues.

Approximately 3.4 miles of the Higgons and Lyons pasture fence and 3,600 feet of pipeline used for livestock watering are on selected/public lands in this allotment. Also, approximately 2.6 miles of the Higgons and Lyons Pasture and Boundary Fence separate this allotment from the Happy Jack Wash allotment.

Equal appraised value

The impacts would be the same as those under the proposed action except that 6,730 acres of selected/public lands would become private. This would result in a net loss of approximately 6,087 acres of BLM lands within the allotment, a reduction from 80 percent to 76.

Approximately 2.2 miles of the Higgons and Lyons pasture fence and 2.6 miles of the Higgons and Lyons pasture and boundary fence are on selected/public lands in this allotment.

No action

The offered/private lands would remain in private ownership and the selected/public lands would remain in public ownership. Public land use would remain at 100 percent.

Diamond Joe allotment

Proposed action

Approximately 1,010 acres of offered/private lands would become public, increasing the amount of BLM lands in the allotment from 68 percent to 73. These lands support forage for approximately seven CYL and, since they are not leased by the rancher, would increase the livestock on the allotment from 150 CYL to 157. The amount of forage allocated from BLM lands would increase from 78 to 79 percent. At the current federal grazing fee rate, this would equate to a $113.40 per year increase in BLM grazing receipts.

Equal appraised value

The impacts would be the same as those under the proposed action.

No action

The private/offered lands would remain in private ownership. Due to the remoteness of these private lands, it is not anticipated that they would be developed in the foreseeable future.

Hackberry allotment

Proposed action

A total of 1,280 acres of selected/public lands would become private and the BLM would relinquish all management of and lose grazing income from them. This would reduce the amount of BLM lands in the allotment from 48 percent to 46.

If the rancher leases these lands from the proponents for grazing, the number of livestock on the allotment would remain at 534 CYL and the amount of forage allocated from BLM lands would decrease from 59 percent to 57. At the current federal grazing fee rate, this would equate to a $172.80 per year reduction in BLM grazing receipts.

If the rancher does not lease the selected/public lands, the number of permitted livestock would be reduced from 534 to 522 and the amount of forage allocated from BLM lands would be reduced from 59 percent to 58. At the current federal grazing fee rate, this would reduce BLM grazing receipts by $199.80 per year. Based on the current lending policies of local basis of $800 to $1,200 per animal unit, the loss of 12 animal units could result in a net loss of $9,600 to $14,400 to the value of the ranch if the exchange is approved. Based on an 83-percent calf crop and present values of $400 per calf, the permittee could lose an estimated $4,000 per year of income if the exchange is approved.

Cooperative agreements exist for all of the range improvements on the selected/public lands within this allotment. The permittee would be compensated for 3.5 miles of allotment boundary fence. Without a perpetual easement from the new land owner or a reserved easement in the name of the U.S. government, the permittee will be unable to preserve the integrity of the allotment boundary and unable to restrict livestock to the allotment.

The permittee would be compensated for one mile of the Valley Pasture fence, but without a perpetual easement from the new landowner or a reserved easement in the name of the U.S., the permittee would be unable to prevent drift of livestock from one pasture to another and might be compensated for the entire four miles of pasture fence or move a portion of the fence to non-selected federal lands. Moving a portion of the Valley fence would result in three miles of new fence with two new gates or cattle guards and costing an estimated $10,500 to $15,500. Loss of any pasture within this 27-pasture, 158,400-acre ranch would result in management changes for the permittee and could result in additional labor expense. Loss of any public lands within the valley pastures could result in increased private land owner/grazing conflicts. Although the remaining BLM lands within this allotment are not cited for disposal, the increased pressures and conflicts from the private subdivisions and grazing could result in the removal of grazing from the remaining BLM lands, which would require public input and environmental review.

The permittee has expressed an interest in separating the allotment into two units, one being that portion of the allotment south of Highway 66 and the other being the two valley pastures north of Highway 66. The unit south of the highway is BLM- and private-controlled lands. The unit north of the highway is checkerboard private-controlled, private uncontrolled and BLM lands with an existing problem of urban interface.

Equal appraised value

The impacts would be the same as those under the proposed action.

No action

The 1,280 acres of selected/public lands would remain under BLM ownership and administered for multiple use. As under the proposed action, the remaining BLM lands within this allotment are not cited for disposal. The increased pressures and conflicts from the private subdivisions and grazing could result in the removal of grazing from the remaining BLM lands, which would require public input and environmental review.

Happy Jack Wash allotment

Proposed action

Approximately 4,528 acres of selected/public lands would become private, reducing the amount of BLM lands in the allotment from 52 percent to 42. These lands support approximately 17 CYL of forage.

If the rancher leases these lands for grazing from the proponents, the amount of forage allocated from BLM lands would be reduced from 100 percent to 81 and the livestock numbers on the allotment would remain at 90 CYL. At the current federal grazing fee rate, this would equate to a $276.75 per year reduction in BLM grazing receipts.

If the rancher does not lease these lands from the proponents for grazing, the amount of forage allocated from BLM lands would remain at 100 percent and the amount of livestock on the allotment would be reduced from 90 CYL to 73. This would equate to a $275.40 per year reduction in BLM grazing receipts.

In addition to the boundary fence mentioned within the Boriana Unit B allotment, approximately 1,250 feet of the Headquarters Pipeline waters livestock on selected/public lands.

If the permittee declines to lease the selected/public lands and improvements, the remaining range improvements would be sufficient to maintain authorized livestock numbers.

The land ownership pattern is a checkerboard throughout most of the allotment. Substantial development has occurred on the private uncontrolled sections in the southern portion of the allotment. Urban interface conflicts have been high and can be expected to rise as the selected/public lands are developed. The number of complaint calls will increase and more time will be required by the BLM for administration of the allotment and by the permittee for livestock management.

Equal appraised value

The impacts would be the same as those under the proposed action except that there would be approximately 3,200 acres of selected/public lands in the allotment supporting approximately 12 CYL of forage. This would reduce the amount of BLM lands from 52 percent to 45.

If the rancher leases these lands for grazing from the proponents, the amount of forage allocated from BLM lands could be reduced from 100 percent to 87 and the amount of livestock on the allotment would remain at 90 CYL. At the current federal grazing fee rate, this would equate to a $189.54 reduction in BLM grazing receipts.

If the rancher does not lease these lands from the proponents for grazing, the amount of forage allocated from BLM lands would remain at 100 percent and the amount of livestock on the allotment would be reduced from 90 CYL to 78, a $194.40 per year reduction in BLM grazing receipts.

No action

The selected/public lands would remain in public ownership and there would be no adjustment in total number of AUMs of specified livestock grazing. Private uncontrolled lands would continue to be developed and the amount of urban interface conflicts would rise as the population grows.

Hibernia Peak Unit A and Unit B allotments

Proposed action

Unit A: Approximately 11,139 acres of offered/private land would become public. These lands support forage for approximately 92 CYL. BLM lands in the allotment, as well as the amount of forage allocated from BLM lands, would increase from 50 percent to 90. Since these lands are leased by the rancher, the amount of livestock permitted in the allotment would remain at 230 CYL. At the current grazing fee rate, this would increase annual BLM grazing receipts by $1,490.40.

Unit B: Approximately 2,032 acres of offered/private land would become public. These lands support forage for approximately 18 CYL. Due to the small percentage of BLM lands in this allotment (less than eight percent), the BLM permit and administration would continue on a 100-percent basis with the livestock numbers increasing from 10 CYL to 28. At the current grazing fee rate, this would increase annual BLM grazing receipts by $291.60.

Under the proposed action, overall costs for the grazing permits for the additional BLM lands in these allotments would be the same as under the current private lease. The current grazing management system will not change under the proposed action.

Equal appraised value

The impacts would be the same as those under the proposed action.

No action

The offered/private lands would remain leased by the rancher (Lease 3-044-SR-01). The lessor can terminate this grazing lease with 90 days written notice. The amount of public land use in the A Unit would remain at 50 percent and the B Unit would remain being billed for 10 CYL at 100 percent public land use for administrative purposes. The current grazing management system would not change.

La Cienega allotment

Proposed action

Approximately 34,692 acres of offered/private lands would become public and approximately 37,417 acres of selected/public lands would become private. Of the offered private lands, approximately 24,522 acres are designated perennial/ephemeral, supporting forage for approximately 98 CYL, and approximately 10,170 acres are designated for ephemeral only grazing. Of the selected/public lands, approximately 25,928 acres are designated perennial/ephemeral, supporting forage for approximately 104 CYL, and approximately 11,489 acres are designated for ephemeral only grazing. The approximately 36,146 acres owned by the proponent which are designated perennial/ephemeral and are being developed support forage for approximately 145 CYL.

Based on this, there would be a net loss of 2,725 acres of BLM lands in the allotment, which supports approximately six CYL. If the permittee chooses to lease the selected/public lands and the lands owned by the proponent, the amount of livestock on the allotment would remain at 500 CYL and BLM lands in the allotment would decrease from 42 percent to 41. However, the amount of forage from the selected/private lands and lands retained by the BLM would increase the amount of forage allocated from BLM lands from 40 percent to 50. At the current federal grazing fee rate, this would equate to an increase of $810.00 in BLM grazing receipts.

If the permittee chooses not to lease these lands from the proponents, the amount of livestock on the allotment would decrease by approximately 249 CYL and 80 percent of the forage would be allocated from BLM lands. At the current federal grazing fee rate, this would equate to a $12.96 per year increase in BLM grazing receipts.

It is anticipated that with development occurring within this ranch, the number of complaint calls will increase and more time will be required by the BLM for administration of the allotment and by the permittee for livestock management.

Equal appraised value

The impacts to this allotment would be the same as those under the proposed action except that approximately 35,518 acres of selected/public lands would become private. Of these, approximately 25,288 acres are designated perennial/ephemeral, which support forage for approximately 101 CYL, and approximately 10,230 acres are designated for ephemeral only grazing. Based on this, there would be a net loss of 826 acres of BLM lands in the allotment, which supports approximately three CYL.

If the permittee chooses to lease these lands from the proponents, the impacts would be the same as those under the proposed action.

If the permittee does not lease these lands, the amount of cattle in the allotment would be reduced by approximately 246 CYL, and 80 percent of the forage would be allocated from BLM lands. At the current federal grazing fee rate, this would equate to a $51.84 per year increase in BLM grazing receipts.

No action

The selected/public lands would remain in public ownership and there would be no adjustment in total number of AUMs of specified livestock grazing. The deeded lands would be developed and the amount of urban interface conflicts would rise as the population grows.

Walapai Ranch allotment

Proposed action

Approximately 5,195 acres of selected/public lands would become private and the BLM would relinquish all management of and grazing income from them. The amount of BLM lands in this allotment would change from 36 percent to 19. If the rancher leases the selected/public lands from the proponents, the livestock numbers in the allotment would remain at 236 CYL and the forage allocated from BLM lands would decrease from 36 percent to 19. At the current grazing fee rate, this would equate to $650.70 per year reduction in BLM grazing receipts.

If these selected/public lands are not leased, the number of livestock on the allotment would be reduced from 236 CYL to 187. Based on current lending policies of local banks of $800 to $1,200 per CYL, the loss of 49 CYL could result in a loss of $39,200 to $58,800 to the value of the ranch. Based on an 83-percent calf crop and present values of $400 per calf, the permittee could lose an estimated $16,270 per year of income if the exchange is approved. There would be a reduction in BLM grazing receipts by $801.90, based on the current grazing fee rate.

The permittee has deeded grazing rights to all but approximately 670 acres of the 15,054 private acres in the allotment and also has almost 4,000 acres of Arizona state land leased. Forage would not be allocated for the selected/public lands unless the permittee can obtain grazing rights. The permittee, through his authorized ranch manager, has stated that he will not be able to continue in the livestock business unless he can obtain long-term grazing rights on the selected/public lands and easements for all range improvements.

Under this alternative, the current permittee would be compensated for interest held in range improvements on selected/public lands. All improvements except for pipelines and a shipping corral are under cooperative agreements whereby the permittee and the U.S. share the cost and ownership in all fences.

The permittee would be compensated for nine miles of allotment boundary fence, but without a perpetual easement to preserve the integrity of the fence or a easement reserved in the name of the U.S., he will be unable to maintain control of livestock to his allotment. Except for the north/south boundary fence between this allotment and the Hackberry allotment, it would not be possible to change allotment boundary fences to non-selected BLM lands.

The permittee would be compensated for six miles of pasture fences, but will be unable to maintain control of livestock in the pastures without a perpetual easement from the new landowner or a easement reserved in the name of the U.S. for pasture fences. It would not be possible to realign pasture fences to non-selected BLM lands.

Approximately 4.5 miles of pipeline would be compensated for and once the selected/public lands become private, the pipeline would need to be moved to existing easements along section lines or the permittee could seek perpetual easements from the new land owner.

Two earthen tanks would be compensated for; they are supplied by the existing pipelines and would need to be replaced with new earthen tanks or new metal troughs. One livestock shipping corral would be compensated for; it would need to be moved to other BLM lands or private controlled lands, or a perpetual easement could be obtained from the new land owner.

Several of the fences on this allotment have old deeded easements that may require purchase to produce a clear title to the selected/public lands.

Although this allotment has some urban interface, problems have not surfaced because the permittee has reserved deeded easements for range improvements, grazing and access on existing private lands. As the private property becomes more developed and more land is fenced from livestock, a time may come when grazing is no longer economically possible on this allotment.

Equal appraised value

The impacts would be the same as under the proposed action except that there are 4,556 acres of selected/public lands in the allotment. The amount of BLM lands would change from 36 percent to 21. If the rancher leases the selected/public lands from the proponents, the livestock numbers would remain at 236 CYL and the forage allocated from BLM lands would decrease from 36 percent to 21. At the current federal grazing fee rate, this would equate to a $573.48 per year reduction in BLM grazing receipts.

If the selected/public lands are not leased, the number of livestock on the allotment would be reduced from 236 CYL to 193. The loss of 43 CYL could result in a loss to the value of the ranch of $34,400 to $51,600 based on the current lending policies of local banks. The permittee's income could be reduced by an estimated $14,276 per year from reduced calf sales, based on a 83 percent calf crop. BLM grazing receipts would be reduced by $594.70 based on current federal grazing fees.

Under this alternative, there are two earthen stock tanks, four and one-half miles of pipeline, one corral facility, seven miles of pasture fence and three and one-half miles of allotment boundary fence on the selected/public lands.

No action

The 5,195 acres of selected/public lands would remain under BLM ownership and be administered for multiple use.

UofA study of effects to ranches involved in the exchange

The report entitled "Hualapai Mountains Land Exchange: Effects on Ranching and Provision of Public Services in Mohave County" is available from the BLM Kingman Field Office upon request. The following section summarizes the findings of impacts to the 13 allotments involved in the exchange. The report analyzes impacts of the proposed action in the draft EIS, but can easily take into account the agency-preferred alternative described in this final EIS due to the composite nature of the analysis.

The equal appraised value alternative differs from the proposed action in that there are approximately 8,900 acres fewer selected/public land acres in the equal appraised value alternative. A large portion of these lands, approximately 3,199 acres, are in the Cedar Canyon allotment, which would be removed from the exchange. The remaining 5,729 acres of selected/public lands excluded from the proposed action alternative in the draft EIS are scattered throughout the Walapai Ranch, Borisaa Unit A and Unit B, Happy Jack Wash, Crossman Peak and La Cienega allotments.

To analyze the effects of the exchange, data were collected from the affected ranches and other ranching studies in Arizona and other parts of the western U.S. From this information, costs and return profiles were developed for three "average" ranches to represent the three situations into which each ranch can be categorized; those with offered/private lands (offered scenario ranch), those with selected/public lands (selected scenario ranch) and those with both offered/private and selected/public (mixed scenario ranch).

The effects to individual ranches were not presented so the confidentiality of business and income data of the ranchers could be protected as well as for clarity of presentation. Economic assessments were made for each ranch and the ranchers were provided with individual assessments for their own ranches. The baseline data and economic impact estimates do not exactly match those of any one ranch. However, they do provide an accurate portrayal of the effects of development in a blocked or dispersed pattern on the affected ranches.

The analysis presents baseline costs and returns for each of the three ranch scenarios. These are compared with data sets in the following tables to analyze a variety of projected circumstances. These baseline costs also serve to analyze effects of short-term impacts without a land exchange. High and low ranges reflect differences in resources and management practices. The high category represents the best case scenario (good year) with the combination of high prices and low costs and the low category (bad year) representing the opposite. Debit levels or leverage positions were not factored into this analysis. In analyzing the long-run scenarios, it is assumed that cattle would be fenced from the private developed lands. This would obviously greatly reduce the use of public lands for grazing where public and private lands are intermingled in a checkerboard ownership pattern. It is also assumed that some private lands would remain within the ranches after the exchange.

Offered scenario ranch

This composite ranch is 40 percent BLM, 25 percent state, 30 percent private lease and five percent private deeded land, and has 351 cows. The proposed land exchange would transfer ownership of the offered/private lands to the BLM. The number of cows would increase from 351 to 393, a result of the BLM permitting cattle on the formerly unleased private lands. Table 4 presents different costs and returns under different circumstances and timeframes. Figures in parentheses represent negative returns.

With the land exchange, the offered scenario ranch net income increases in the high category (good year) and shows improvement in the low category (bad year). If the ranch loses access to private lease lands because of development, the operation does not earn enough income to cover fixed costs. In some years, the ranch may not cover average variable costs. Although the exchange would significantly reduce the losses associated with development of private lease lands, it would not be enough to allow for positive ranch income.

Selected scenario ranch

This composite ranch is 55 percent BLM, 11 percent state, 20 percent private lease and 14 percent private deeded land, and has 251 cows. In this scenario, selected/public lands become private lands, which would have to be leased to maintain the present number of cows. The lease would cost more than BLM grazing fees, hence a slight decrease in returns. Table 5 presents the different costs and returns of the ranch under different circumstances and timeframes. Figures in parentheses represent negative returns.

Table 4. Offered scenario ranch information

	Offered ranch base information		Short run, land exchange occurs, switch from private to federal lands		Long run, no land exchange occurs, development occurs on private lease lands		Long run, exchange occurs, development occurs on remaining private lease lands	
Number of cows	351		393		70		236	
	High	Low	High	Low	High	Low	High	Low
Gross income	$115,031	$92,357	$128,835	$103,440	$23,006	$18,471	$77,301	$62,064
Variable costs	$73,895	$79,895	$82,076	$88,796	$19,325	$20,525	$49,697	$53,729
Net cash returns	$41,136	$12,462	$46,759	$14,644	$3,681	($2,054)	$27,604	$8,335
Fixed costs	$27,750	$37,500	$27,750	$37,500	$27,750	$37,500	$27,750	$37,500
Total costs	$101,645	$117,395	$109,826	$126,296	$47,075	$58,025	$77,447	$91,229
Net ranch income	$13,386	($25,038)	$19,009	($22,856)	($24,069)	($39,554)	($146)	($29,165)

Table 5. Selected scenario ranch information

	Selected ranch base information		Short run, land exchange occurs, with private lease		Short run, land exchange occurs, development occurs, without private lease		Long run, no exchange occurs, development occurs on private lease lands		Long run, land exchange occurs, development occurs on private lease lands, including selected land	
Number of cows	251		251		231		75		50	
	High	Low	High	Low	High	Low	High	Low	High	Low
Gross income	$129,607	$99,873	$129,607	$99,873	$119,238	$91,883	$38,882	$29,962	$25,921	$19,975
Variable costs	$66,484	$67,739	$66,535	$67,790	$59,548	$60,703	$19,418	$19,794	$12,945	$13,196
Net cash returns	$63,123	$32,134	$63,072	$32,083	$59,690	$31,180	$19,464	$10,168	$12,976	$6,779
Fixed costs	$19,462	$24,847	$19,462	$24,847	$19,462	$24,847	$19,462	$24,847	$19,462	$24,847
Total costs	$85,946	$92,586	$85,997	$92,637	$79,010	$85,550	$38,880	$44,641	$32,407	$38,043
Net ranch income	$43,661	$7,287	$43,610	$7,236	$40,228	$6,333	$2	($14,679)	($6,486)	($18,068)

In the short run, the exchange would have minimal effect on this ranch's income if the ranch obtains leases on the selected/public lands. However, even without these leases, the losses from the exchange are small. This changes in the long run, where widespread development would threaten the ranch's viability with or without the land exchange. The exchange would increase the losses from development due to the increase in private land; however, the effect of the exchange is small compared to the losses imposed by development.

Mixed scenario ranch

This composite ranch is 66 percent BLM, four percent state, 25 percent private and five percent private deeded land, and has 270 cows. The exchange would reconfigure the ownership of lands from a checkerboard pattern into blocks of private and BLM lands, since both offered/private and selected/public lands exist within its boundaries. Some ranches would still contain a significant amount of land in a checkerboard pattern, however. Private leases for the selected/public lands would have to be acquired to maintain cow numbers for the short run scenario. Table 6 presents the different costs and returns of the ranch under different circumstances and time frames. Figures in parentheses represent negative returns.

In the short run, the exchange has virtually no impact on the costs and returns of the ranch. In the long run, development of private lands implies that the ranch would not be viable without an exchange because of the private lands scattered over a large area. The exchange would allow the ranch to break even. Net ranch income is greater with the exchange than without it. The exchange would mitigate the negative effects of development on ranch income.

Conclusions

The overall conclusion of this analysis is that in the short run, the exchange would have minimal impacts on the three composite ranches, especially if private leases are obtained on selected/public lands. In the long run, development of private lands in the offered and selected ranch scenarios would render these ranches uneconomic to maintain, regardless of whether the exchange takes place. The Mixed Composite Ranch would benefit from the exchange by allowing public holdings to be consolidated, which

Table 6. Mixed scenario ranch information

	Mixed ranch base information		Short run, land exchange occurs, with private lease		Short run, land exchange occurs, without private lease		Long run, no land exchange occurs		Long run, land exchange occurs with private lease		Long run, land exchange occurs without private lease	
No. of cows	270		270		259		54		162		156	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Gross income	$96,886	$77,044	$96,886	$77,044	$93,010	$73,962	$19,377	$15,409	$58,131	$46,226	$56,008	$44,521
Variable costs	$50,036	$52,390	$50,097	$52,451	$45,858	$48,117	$9,997	$10,468	$28,846	$30,258	$27,820	$29,176
Net cash returns	$46,850	$24,654	$46,789	$24,593	$47,152	$25,845	$9,380	$4,941	$29,285	$15,968	$28,188	$15,345
Fixed costs	$19,117	$25,867	$19,117	$25,867	$19,117	$25,867	$19,117	$25,867	$19,117	$25,867	$19,117	$25,867
Total costs	$69,153	$78,257	$69,214	$78,318	$64,975	$73,984	$29,114	$36,335	$47,963	$56,125	$46,937	$55,043
Net ranch income	$27,733	($1,213)	$27,672	($1,274)	$28,035	($22)	($9,737)	($20,926)	$10,168	($9,899)	$9,071	($10,522)

would yield a smaller allotment, but one not as negatively impacted by development.

Water resources

Proposed action

Selected/public lands

This section analyzes the impacts to water resources after the selected/public lands have been sold as 40-acre parcels for residential development. Such development means that each 40-acre parcel will likely contain at least one home, one septic system and one road; some or all of the parcels may contain wells. This section will not analyze land uses that may occur should the 40-acre parcels be resold and redeveloped.

– Surface runoff will likely increase during storms as a result of compacted areas such as roads and parking areas; such compacted areas reduce the amount of rainfall that infiltrates the ground, which translates into increased surface runoff.
– Increased surface runoff could result in higher levels of suspended sediment during storm events.
– In the Dutch Flat area, approximately 725 acre-feet per year of water will be consumed by an estimated 1,450 new residences, assuming 0.5 acre-feet per year as an average use per residence (ADWR 1998). In the Antares area, about 120 acre-feet per year of water will be consumed by an estimated 240 new residences. The likely water source for the new residences in Dutch flat and Antares is groundwater from wells in the Sacramento and Hualapai valleys due to the abundance of groundwater and absence of surface water in those valleys. However, the number and locations of wells are not known. Each residence could contain its own well, but it is more likely that several large-capacity wells would supply water via a delivery system. The latter is the case in nearby Golden Valley in the Sacramento Valley 25 miles north of Dutch Flat. In Golden Valley, two water delivery companies (the Pioneer Valley and Golden Valley water improvement districts) deliver groundwater from seven 1,200- to 1,500-foot deep wells to approximately 3,300 homes.
– The combined pumping of the new wells in the Sacramento and Hualapai valleys to support residential development in Dutch Flat and Antares may cause a decline in the water table of those areas. Estimating the amount of possible groundwater level decline and its timing, as well as the number of wells that those areas could support without a groundwater level

decline, would require the creation of an in-depth groundwater model for the southern part of the Sacramento Valley and the Hualapai Valley. This has not been done, and would require information that is currently unknown, i.e., the exact number of wells, their locations and pumping rates. The city of Kingman, however, has evaluated its future water supply, assuming a population of 290,000 people between the years 2040 and 2078. The 1993 City of Kingman Water Adequacy Study, by Willdan Associates, concluded that ". . . the city has sufficient groundwater supplies to meet the needs of the next century." This report did not specifically evaluate the groundwater resources under the Dutch Flat and Antares areas, and did not evaluate possible groundwater drawdowns in the parts of the Sacramento and Hualapai valleys that were studied. The estimated 5.5 million acre-feet of recoverable groundwater under the Sacramento Valley subarea suggests that there is enough groundwater to support extensive residential development in Dutch Flat; however, water table declines from long-term pumping from new wells are still possible. In Golden Valley, in the Sacramento Valley 25 miles north of Dutch Flat, groundwater levels have declined 26 feet from 1979 to 1990 (Rascona 1990). Groundwater withdrawals in Golden Valley by the two water improvement districts and the Cyprus Mineral Park approaches 1,300 acre-feet/year (Rascona 1990).

– Groundwater recharge will decrease slightly in the Dutch Flat and Antares areas. Compacted areas (roads, parking areas) from residential development increase surface runoff and reduce the infiltration of surface water.

– There is a possibility that septic tanks associated with homes will impact groundwater quality in the Dutch Flat and Antares areas. However, the likelihood of such groundwater contamination is greatly reduced by the arid climate and that the depth to groundwater in both areas generally exceeds 250 feet.

– The function of the watershed containing the Dutch Flat and Antares areas will change. As previously discussed in this section, surface runoff and sediment erosion will likely increase during storm events and the extraction of groundwater by domestic wells may result in a decline in the areas' water table over time.

– Groundwater use, surface runoff and sediment load will increase in the Dutch Flat and Antares areas at a faster rate under the proposed action than under the no action alternative. This is because the blocking-up of private land under the proposed action will accelerate residential development; such development would occur more slowly under the checkerboard land pattern of the no action alternative.

– Two surface water rights held by the BLM would be transferred out of federal ownership (Appendix E).

– Six earthen stockponds, one waterhaul, one wildlife catchment and one well would leave federal ownership.

– Consultation with AGFD determined that Sacramento Valley catchment 1 will be abandoned and therefore transferred with the property.

Offered/private lands

This section analyzes the impacts to water resources as a result of the foreseeable use of multiple-use management (i.e., livestock grazing, recreation, mineral exploration, wildlife management) by the BLM.

– The quantity and quality of surface water would remain unchanged as the offered/private lands, under BLM management, would receive minimal development such as livestock grazing and low-impact recreation. The BLM would acquire approximately 10.7 miles of riparian area in Bull, Hibernia and Beecher canyons, Cow Creek and Pilgrim Wash, and stream segments associated with these five riparian areas.

– Existing water sources (stream, springs, stockponds and wells) would be available for wildlife and livestock.

– There will be minimal impact to the quantity and quality of groundwater. Most land uses authorized by the BLM (i.e., livestock grazing and low-impact recreation) do not impact groundwater, and wells drilled for stockwatering on BLM lands in Arizona withdraw small amounts of water (generally less than 20 gpm).

– Twenty-one surface water rights and eight well permits held by the proponents (i.e., Santa Fe Pacific Railroad) for stockwatering would be transferred to the BLM (Appendix F). Immediately prior to signing the closing documents, the exchange proponents have agreed to amend the surface water filings to include wildlife use. Existing stockwatering numbers will be unchanged as a result of this amendment process. Only those rights held by the exchange proponents will transfer to the BLM; no other privately held rights will be affected.

– The BLM would acquire approximately 40 springs, four stockponds and two waterhauls.

Equal appraised value

Impacts are the same as those under the proposed action with the following exceptions.

– Approximately 700 acre-feet/year of water will be used in Dutch Flat under this alternative, as opposed to 725 acre-feet/year under the proposed action. It is assumed that this water will come from wells in the Dutch Flat and Antares areas; the number and locations of those wells are unknown. The 700 acre-feet/year is an estimate based on the construction of 1,384 new homes in the Dutch Flat, a water use of 0.5 acre-feet/year per residence, and does not include domestic wells that might be developed on lands that are currently private.

– Approximately 70 acre-feet/year of groundwater will be withdrawn from the selected/public lands in the Antares area under this alternative, as opposed to 120 acre-feet/year under the proposed action. The 70 acre-feet/year is an estimate based on the development of 140 new residences and a groundwater withdrawal of 0.5 acre-feet/year.

– For the selected/public lands, one water right held by the BLM would be transferred out of federal ownership (Appendix E).

– One well would be retained in federal ownership.

No action

Selected/public lands

Assuming no significant change in land uses authorized by the BLM, there would be no change to the water resources described in Chapter 3 and Appendix C.

Offered/private lands

Assuming residential development in the parts of the Big Sandy River basin and Hualapai Mountains depicted in Map 1, the following impacts are anticipated.

– Surface runoff will likely increase during storms as a result of compacted areas such as roads and parking lots; such compacted areas reduce the amount of rainfall that can infiltrate the ground, which translates into increased surface runoff.

– Increased surface runoff could result in higher levels of suspended sediment during storm events.

– Approximately 860 acre-feet/year of groundwater will be withdrawn as a result of an estimated 1,720 new residences. The 860 acre-feet/year assumes that the offered/private lands are sold as 40-acre parcels, that each parcel contains one residence and that each residence uses 0.5 acre-feet/year. However, it may take many years before the residential development and resulting groundwater withdrawal occur. This is because the checkerboard land ownership pattern of the no action alternative makes residential development more difficult than the consolidated land ownership pattern of the proposed action and equal appraised value alternatives.

– The combined pumping of all of the wells in the area may cause a decline in the water table. Estimating the amount of possible groundwater level decline and its timing, as well as the number of domestic wells that the area could support without a decline in the water table, would require the creation of a groundwater model for the area. Historically, the BLM has not done such modeling for lands that will be remain in private ownership.

– Groundwater recharge will decrease slightly. Compacted areas (roads, parking areas) from residential development increase surface runoff and reduces the infiltration of surface water.

– There is a possibility that septic tanks associated with homes will impact groundwater quality in the area, given that the depth to groundwater is less than 50 feet in some areas of the Hualapai Mountains and Big Sandy River subareas.

– The function of the watershed containing this part of the Big Sandy River basin and the Hualapai Mountains will be changed. As previously described in this section, surface runoff and sediment erosion will likely increase during storm events, and the extraction of groundwater may result in a decline in the area's water table over time.

– Groundwater use, surface runoff and sediment load will increase in the Dutch Flat and Antares areas at a slower rate under the no action alternative than under the proposed action. This is because the blocking up of private land under the proposed action will accelerate residential development; such development would occur more slowly under the checkerboard land pattern of the no action alternative.

– Existing surface water rights and well permits would most likely continue to be used for stockwatering in the short term. However, as parcels are developed for residential uses, water rights would be amended to reflect these new uses.

Socioeconomics

Population and demographics

Proposed action

Projections for the year 2005 indicate that Mohave County will have an annual growth of 3.14 percent, well above the state's rate of 2.3 percent, making Mohave County one of the fastest growing counties in the state (Arizona Department of Economic Security, Research Administration, Population

Statistics Unit, February 1997). Using the calculation of one dwelling per 40 acres, there could potentially be 1,450 new residences in the Dutch Flat area and 240 new residences in the Antares area. However, the exchange of these lands would not likely affect the projected Mohave County population and demographics.

Equal appraised value

The impacts on county population and demography would be the same as those under the proposed action.

No action

The impacts on county population and demography would be the same as those under the proposed action.

Taxes

Proposed action

Transferring ownership of the offered/private lands from private to federal would not likely affect regional tax collections for the county. Mohave County would lose $12,000 in private property taxes, less than 0.01 percent of the county's total collections. The county could initially gain an estimated $86,000 in private property taxes assessed on the selected/public lands.

This potential assessment of the selected/public lands is based on the Mohave County Assessor's fair market value on surrounding lands previously sold – parcels ranged from $50 to $267 per acre. That amount is multiplied by an assessment of 16 percent for Class 4 lands (agriculture or vacant) and the total is then multiplied by the tax rate, which varies per tax district.

The initial net increase to Mohave County is $74,000. Once these parcels are broken into 40- and 160-acre parcels, it is expected that the fair market value of these lands will increase, thus increasing personal property tax revenue for Mohave County.

Equal appraised value

Mohave County would lose $9,763.88 in PILT payments, but this would be offset in part by $5,675 in PILT payments for the offered/private lands. The total net loss to Mohave County in PILT payments is estimated to be $4,089.

Mohave County would gain $72,567 in private property taxes assessed on the selected/public lands. The impacts would be the same as those under the proposed action. The initial net increase to Mohave County is $60,556. Once these parcels are broken into 40- and 160-acre parcels, it is expected that the fair market value of these lands will increase, thus increasing personal property tax revenue for Mohave County.

No action

Without the land exchange, there would be no change in the existing amount of federal PILT payments, the annual property taxes paid to the county for private lands or the grazing fees collected by the BLM.

Yucca School District

Proposed action

Sale and subsequent development of private lands will impact the Yucca School District regardless of the land ownership pattern, bringing more property owners into the school district. The bulk of the private land within the school district is classified as agricultural land. With sales occurring in 40-acre parcels, the land would be reclassified as rural, regardless of the exchange. This change in classification would increase the tax base for the school district.

In general, more students in the school district means that more services would be needed no matter what the land ownership pattern. The main difference between the proposed action and the no action alternatives is how the distribution of these services would be affected.

Under the proposed action alternative, rural development would be spread over a smaller area (200 square miles) and development would be more consolidated and, therefore, easier for the schools to service. Bus service would be more efficient with a blocked ownership pattern.

Under the no action alternative, people would be spread over a much larger area (500 square miles) and service of students over such a large area would be much more difficult.

The Yucca School District will be affected by the land sales in addition to the effect on the efficiency of services provided. How much in the way of services and how soon they will be needed is dependent on how soon people with school-aged children move to the area. This, in turn, depends on future industrial or other development within the area.

A calculation of the potential private property taxes for the selected/public lands within the school district estimates that the tax base would increase by nearly $20,000 with the exchange.

Equal appraised value

The tax base for the school district would increase by nearly $17,000.

No action

Without the exchange, there would be no change in the tax base in the school district. The ownership pattern will remain the same, making bus service inefficient by spreading people out over 500 square miles.

Public safety

Proposed action

Blocking up private land and eliminating the checkerboard land ownership pattern would aid in the response time to private land owners.

Equal appraised value

The county sheriff's department will continue to provide law enforcement to those areas. The checkerboard land pattern may impact response time.

No action

The county sheriff's department will continue to provide law enforcement to those areas.

Yucca Fire District

The land exchange and alternative could affect the Yucca Fire District and the BLM fire organization.

Proposed action

By blocking up private lands, response time for fire and emergency services would improve, providing more efficient service.

The Yucca Fire District could potentially expand to approximately 300 square miles to provide coverage for the blocked private land area. If this area was brought into the Yucca Fire District, two or three more substations would be needed along Alamo Road and in the Dutch Flat area.

The road system put in by the developer would enhance access in the Dutch Flat area where the fuels are light and these roads would be effective fire breaks. Water in this area would be more readily available than in the Hualapai Mountains.

Fire coverage for the blocked public lands in the Hualapai Mountains would be provided by the BLM. Implementation of a prescribed fire plan could occur, lowering the possibility of a catastrophic fire.

Equal appraised value

The impacts would be the same as those under the proposed action.

No action

Emergency fire services in the checkerboard land patterns by the nearest fire district for private lands will continue. The BLM and the Yucca Fire District would provide firefighting coverage in the intermingled ownership pattern.

The Yucca Fire District could potentially expand to approximately 500 square miles. If this area was brought into the Yucca Fire District, the two or three substations identified would be needed. An additional two to four substations would have to be built to cover the mountainous areas and the BLM would potentially need to set up a fire station in the Hualapai Mountains to provide coverage.

Access for both residence and emergency equipment would be improved by roads built by the developer, but the steep slopes would be a problem. Yucca water tenders can currently reach just past the Antler Mine area on the Boriana Mine road. Extensive upgrades of roads would be needed for access by fire engines, water tenders, etc.

The fuel loads and types in the Hualapai Mountains would present safety problems for both people and possessions. The first priority would be to evacuate homeowners. The roads would provide possible fire breaks, but would not stop the fire in a heavy-fuel, high-wind situation. Water availability in the Hualapai Mountains would be a concern.

Biological resources

Habitat evaluation procedure

A separate biological report was prepared in support of this project (BLM 1997). AGFD and BLM biologists agreed to the analysis method used for the report, which is based on the habitat evaluation procedure developed by the USFWS.

Through this process, specific resource objectives were developed and 18 key species or groups of species were considered for evaluation to gauge the extent or magnitude of impacts from the proposed action and no action alternatives. Six species were selected with the primary goal that their selection would do the most toward satisfying the wildlife and plant resource objectives identified in the biological report. In addition, the selected species often serve as "umbrella species" for other species. In other words, since elk and Hualapai Mexican vole share the same habitat, improving vole habitat represents improved elk habitat as well.

Land ownership impacts

Under the proposed action, the checkerboard land ownership pattern would be changed to consolidated blocks of private and public lands. Management of contiguous (non-checkerboard) public lands provides enhanced opportunities to manage wildlife and their habitats, ensuring long-term availability and conservation of a variety of habitats for most species. Habitat changes are shown in Table 7. In the project area, habitat for the two listed species, Mexican spotted owl and Hualapai Mexican vole, would be secured by resolving the checkerboard land status.

In addition, the BLM, USFWS and AGFD would have the ability to focus on long-term goals and objectives for conservation and recovery of endangered species. The BLM would bear the burden of consultation with the USFWS and implementation of the Endangered Species Act on lands inhabited by endangered species only on existing and newly acquired public lands. This would also remove the necessity for private land owners to coordinate with federal agencies on development issues associated with their private lands within this area.

Natural resource values and land management, including wildlife habitat, would be significantly enhanced on the consolidated public lands. Opportunities for improved management would include water developments, prescribed fire management, endangered species habitat conservation, hunter access and other wildlife-associated recreational activities.

Impacts associated with increased urbanization will be restricted primarily to the Dutch Flat and Antares areas. Some impacts from urbanization would still occur along private/public boundaries. Natural resource management on the blocked private lands would not require coordination with the BLM. All lands in Dutch Flat and along Antares Road can be developed for rural residential use without rezoning. Several possible scenarios or outcomes would occur, including habitat alteration and ground clearing for home and road construction, leveling of lots, fencing, landscaping and domestic animal grazing.

In addition, wildlife may be adversely affected by increased traffic, off-road vehicles, harassment and mortality due to free-roaming cats and dogs.

Impacts as a result of implementing the equal appraised value alternative would be the same as those identified under the proposed action with the following exception. Approximately 3,840 acres of semi-desert grassland habitat will remain in public ownership in the Antares area and approximately 5,060 acres of creosote-white bursage habitat would remain in public ownership in the Dutch Flat area (Table 7). These acres would be subject to the same impacts as those identified under the no action alternative.

Under the no action alternative, the benefits to wildlife and habitat identified under the proposed action would not be realized. Impacts of urbanization would be more widespread over a larger area under the no action alternative and result in twice as much habitat being negatively affected by associated human activities. Management of both private and public lands in this scenario would be burdensome.

Species evaluation

The previous discussion on land ownership impacts applies to all of the species selected for evaluation that follow. For each species selected for evaluation, habitat units were used to objectively develop a measurement for comparing the two alternatives. The value or number of habitat units was based on a combination of the habitat type and its value to a species in combination with ownership pattern. The resulting habitat unit values reflect the relative value of one alternative compared to the other. Generally, the higher the number of the habitat units, the better the alternative is for the species being evaluated (Appendix I and BLM 1977).

Mule deer

Under the proposed action alternative, mule deer habitat values are 52,728 habitat units for the project area. Under the no action alternative, habitat values are lower at 23,180 habitat units for the project area. This difference suggests that the proposed action represents a positive management change for mule deer. The species will not only gain in acreage of habitats it prefers, i.e., Arizona interior chaparral, but these habitats will exhibit more continuity and integrity than those found under the no action alternative. Under the proposed action, open space will essentially be conserved, benefitting deer by allowing them free movement and habitats relatively free from impacts associated with human activities.

Impacts to mule deer under the equal appraised value alternative would be the same as those identified under the proposed action with the following exception. Approximately 3,840 acres of semi-desert grassland habitat would remain in public ownership in the Antares area and approximately 5,060 acres of creosote-white bursage habitat would remain in public ownership in the Dutch Flat area (Table 7). Mule deer utilizing these acres will be subject to the same impacts as those identified under the no action.

Table 7. Habitat changes under the proposed action and equal appraised value alternatives

[illegible]	[illegible]	[illegible]	[illegible]
Ponderosa pine-Gambel oak	330	0	+ 330
Arizona interior chaparral	24,904	0	+ 24,904
Crucifixion-thorn-mixed shrub	1,817	0	+ 1,817
Joshua tree-juniper	9,111	7,004	+ 2,107
Paloverde-mixed cacti	21,374	1,445	+ 19,929
Joshua tree-mixed shrub	11,370	31,111	- 19,741
Creosote-white bursage	5,705	(15,089) 18,109	- 12,404
Semi-desert grassland	0	(6,220) 10,020	- 10,020
Riparian scrub	1,328	1,926	- 588
Riparian	10.7 miles	0 miles	+10.7

NOTE: Acreages are approximate. Acreages shown in parentheses are for the equal appraised value alternative only. All other acreages are for both the proposed action and equal appraised value alternatives.

Under the no action alternative, mule deer will not gain preferred habitat. Areas of preferred habitat will remain in a checkerboard land status and eventually the private land will be developed into rural residential developments. This will result in progressive degradation of habitat values for mule deer on the private lands as well as on the adjacent intermingled public lands. It is expected that mule deer numbers will decline in the project area.

Gambel's quail

Under the proposed action alternative, habitat units will be at 53,543 for the project area. Under the no action alternative, habitat units were lower at 47,736 habitat units for the project area. Although it appears that there is little difference between the two alternatives, habitats under the proposed action will provide more continuity and integrity than those found under the no action alternative. In addition, benefits for quail are similar to those described for mule deer.

Impacts to Gambel's quail under the equal appraised value alternative would be the same as those identified under the proposed action with the following exception. Approximately 3,840 acres of semi-desert grassland habitat would remain in public ownership in the Antares area and approximately 5,060 acres of creosote-white bursage habitat would remain in public ownership in the Dutch Flat area (Table 7). Gambel's quail utilizing these acres will be subject to the same impacts as those identified under the no action alternative.

Impacts to Gambel's quail from the no action alternative are similar to those described for mule deer.

Hualapai Mexican vole

Vole habitats on private lands, whether blocked up or checkerboarded, are considered to be at great risk for long-term survivability. Because voles are so limited in distribution and not considered adaptable to or tolerant of real estate development and human disturbance, habitat values for private lands containing voles were considered low. Under private ownership, the BLM's management capability to resolve conflicts to conserve an endangered species would be nearly nonexistent. Under private land ownership subject to development, the likelihood of these lands being maintained in a way that contributes to long-term conservation of the Hualapai Mexican vole is very remote and not anticipated.

Under the proposed action, approximately 348 habitat units are available for voles, significantly greater than the 17.4 habitat units available under the no action. From the perspective of long-term conservation of the vole, public lands provide a much greater degree of security and preservation options. Acquisition of these lands would be in agreement with goals and objectives of the Hualapai Mountains Research Natural Area/ACEC, which includes management prescriptions for specific vole habitats. This action would result in 330 acres of vole habitat, including two known occupied sites, becoming public under protection of federal laws, such as the Endangered Species Act. Conservation of endangered species on federal lands is required by law, whereas similar actions on private lands are more discretionary on the part of the land owner.

Under the proposed action, 330 acres of suitable habitat for the Hualapai Mexican vole would become public and no suitable habitat would become private. A determination of May Effect - Beneficial for the vole has been made for the proposed action.

Impacts to the Hualapai Mexican vole and its habitat under the equal appraised value alternative would be the same as those identified under the proposed action. There is no vole habitat in the selected lands that dropped out under this alternative.

Under the no action alternative, 17.4 habitat units (Appendix I) are available to voles on lands being considered under this proposal. Only 330 acres of ponderosa pine/Gambel oak habitat are involved in this exchange. Under the no action alternative, private lands containing known vole habitat would likely not contribute to recovery of this endangered species if any type of urban or rural land development occurred. The burden of compliance with the Endangered Species Act would rest with the private land owner, rather than shifting to the federal government.

In the long term, if these private lands were developed, the local vole population would gradually diminish and disappear. The species would become even more endangered, putting additional pressures on remaining public lands to sustain the overall population. The lack of acquisition of lands identified under the RMP would result in less effective management of vole habitat, and urbanization would increase. Under the no action alternative, private lands supporting the vole would eventually lose this capability and would not contribute to long-term species conservation.

Mexican spotted owl

Spotted owl habitats on private lands, whether checkerboarded or blocked up, are considered to be at great risk for long-term survivability. Owls are so limited in distribution and not considered adaptable or tolerant of real estate development and human disturbance that habitat values are low for private lands supporting spotted owls. Under private ownership, the BLM's management capability to resolve conflicts to conserve an endangered species would be nearly nonexistent. Consequently, under private land ownership subject to development, the likelihood of these lands being maintained in a way that contributes to long-term conservation of the Mexican spotted owl is very remote and not anticipated.

Under the proposed action, approximately 216 habitat units are available for owls, significantly greater than the 18.4 habitat units available under the no action. From the perspective of the owl and its long-term conservation, public lands provide a much greater degree of security and preservation options. This action would result in 330 acres of potential owl habitat becoming public under protection of federal laws, such as the Endangered Species Act. Conservation of endangered species on federal lands is required by law, whereas similar actions on private lands are more discretionary on the part of the land owner.

Under the proposed action, 330 acres of suitable habitat for the Mexican spotted owl would become public and no suitable habitat would become private. A determination of May Effect - Beneficial for the owl has been made for the proposed action.

Impacts to the Mexican spotted owl and its habitat under the equal appraised value alternative would be the same as those identified under the proposed action. There is no spotted owl habitat in the selected lands that dropped out under this alternative.

Under the no action alternative, 18.4 habitat units are available to spotted owls on lands being considered under this proposal. Only 330 acres of ponderosa pine/Gambel oak habitat are involved in this exchange.

In the long term, if these private lands were developed, potential owl habitat would gradually diminish and eventually disappear. The species would become even more endangered, putting additional pressures on the remaining public lands to sustain the overall population. Under the no action alternative, the private lands supporting the Mexican spotted owl may eventually lose their capability to support this species and, therefore, would not contribute to its long-term conservation.

Desert tortoise

Desert tortoise habitat in the Kingman Field Office area has been classified as category I, II or III, dependent on management capabilities and the relative densities of desert tortoises (Chapter 3, Affected environment). Under the proposed action, there will be a net gain (8,724 acres) in the higher priority category I (656 acres) and II (8,068 acres) habitats coming under federal protection and a net loss in the lower priority Category III habitat (Table 8). Category I and II habitats are considered essential or potentially essential to sustaining viable populations of tortoises over the long term. There would be a net loss of 22,565 acres of the lower quality Category III habitat where conditions to support desert tortoises are much more marginal and populations typically occur in much lower densities. Overall, there would be a net loss in quantity of desert tortoise habitat of 13,841 acres, offset by a net gain in quality of tortoise habitat due to acquisition of 8,724 acres of higher quality tortoise habitat.

Although there will be a net loss of overall tortoise habitat under the proposed action, there will be no net loss of the more desirable category I and II habitats. The Category III habitats being lost to development, already considered marginal for tortoise, contain undesirable checkerboard land ownership, support relatively low population numbers compared to category I and II areas and are not considered essential to maintaining viable tortoise populations over the long term.

Habitat reclassification for desert tortoise

Under the proposed action, resolution of the checkerboard land ownership pattern and the resulting consolidation of high-quality desert tortoise habitat would result in a recategorization of some tortoise habitats (Table 9). Some acquired Category II habitat (15,945 acres) and adjacent Category II lands already in public ownership would be reclassified as Category I as the checkerboard ownership changes to solid blocked public lands and the BLM's management capability and ability to resolve conflicts are enhanced. Some of the newly blocked public lands immediately adjacent to private lands would still be subject to impacts from urbanization as described under Land ownership impacts. Conversely, some of the Category II checkerboarded land (7,877 acres) will become solid blocked private, resulting in reduced management capabilities by the BLM to resolve conflicts or protect tortoises and their habitats. Tortoises are expected to eventually become displaced or eliminated due to development activities on these solidly blocked private lands, although some individual tortoises may persist there for many years. These lands, classified as Category II tortoise habitat under the current mixed ownership pattern, would be reclassified as Category III habitat due to more management conflicts unresolvable by the BLM. These private lands are not expected to contribute to long-term tortoise conservation.

As discussed above for Category II lands, once the proposed action is completed, all tortoise habitat associated with the exchange, including category I, II, and III habitats, would be reclassified approximately as indicated in Table 9. On public lands, there would be a relatively small loss of Category II (7,877 acres) and Category III lands (22,565 acres) and a substantial gain in Category I habitat (45,401 acres).

These would contribute substantially to long-term tortoise conservation and adequately mitigate the much smaller loss of acres of category II and III lands (Table 9 and BLM 1997). Consolidating high-quality habitat where management conflicts are resolvable and tortoise populations occur at medium to high densities will result in the ability to sustain viable tortoise habitat and populations over the long term. Additional benefits are described under the land ownership section. The loss of 7,877 acres of Category II and 22,565 acres of Category III habitat is offset by development of a new, large Category I area where the future of the desert tortoise in the Hualapai Mountains is secured. Thus, there would be a 34,922-acre net increase on the private lands of more developable Category III lands considered less important than category I and II habitats to long-term desert tortoise conservation. Acquisition of the offered/private lands would be in agreement with goals and objectives of the McCracken Desert Tortoise Habitat ACEC, which includes management prescriptions for specific tortoise habitats in the McCracken Mountains.

Under the equal appraised value alternative, impacts to desert tortoise and their habitat would be the same as those identified under the proposed action with the exception of the 5,060 acres of desert tortoise Category III habitat that would remain in public ownership near I-40. Impacts to tortoise and their habitat on these 5,060 acres would be the same as those identified under the no action alternative. There is no tortoise habitat in the Antares area.

Under the no action alternative, due to the checkerboard/mixed ownership pattern, it is anticipated that virtually all of the tortoise habitat associated with this exchange proposal, including the category I and II areas, would ultimately be classified as Category III. Urbanization associated with development would eventually engulf and surround remaining tortoise habitat on the public lands.

Table 8. Net gains and losses of desirt tortoise habitat under the proposed action, under existing habitat classifications

Desert tortoise habitat	*Acres going private (Santa Fe)*	*Acres becoming public (BLM)*	*Net gain or loss of tortoise habitat (on public land)*
Category I	0	656	+ 656
Category II	7,877	15,945	+ 8,068
Category III	51,696	29,131	- 2,565
	59,573	45,732	- 3,841

Table 9. Approximate tortoise habitat changes, after reclassification, under the proposed action

Tortoise habitat category	Public lands acres	Private lands acres
Category I	+ 45,401	- 656
Category II	- 7,877	- 15,945
Category III	- 22,565	+ 34,922

Tortoises would persist, perhaps for many years, but recruitment of young tortoises would be reduced due to increased predation from domestic and feral pets. Furthermore, habitat quality would be degraded due to various recreational activities and construction of access roads and other intrusions associated with urban development as described under the land ownership patterns section. Under the mixed ownership pattern, the quality and quantity of desert tortoise habitat is expected to slowly decline as development increases and habitat becomes more fragmented. These lands would likely not contribute to long-term species conservation. Under this alternative, there would be no Category I desert tortoise habitat in the Hualapai Mountains and the Category II habitat would eventually be degraded. The entire area would ultimately be Category III at best with desert tortoises forced to exist in fragmented habitat.

The ultimate loss of the total private acres proposed for exchange due to development, as well as the loss of habitat quality of a similar amount of adjacent federal acres interspersed with these private lands, might contribute to the need for listing this species as endangered.

White-margined penstemon

The primary criterion for evaluating the overall effect of the proposed exchange on the white-margined penstemon is the long-term survivability of the Dutch Flat population, the only known population in Arizona. The important habitat value for white-margined penstemon habitat was rated by section based on the amount of suitable soil habitat and density of plants documented in each section. The sections of land were classified as high, medium or low quality. Manageability was then evaluated based on four categories, from highest to lowest, respectively; blocked public lands, checkerboard public lands, checkerboard private lands and blocked private lands. The blocked land categories are the proposed action and the checkerboard pattern reflects the no action alternative. The proposed action offers the advantage of blocking public lands into a contiguous area of greater manageability.

The benefit of the proposed exchange for the white-margined penstemon is the consolidation of habitat which results in increased manageability capability and long-term species conservation.

Under the proposed action, the tradeoff or cost of blocking up this habitat under federal ownership is the loss of management capability and conservation of other white-margined penstemon habitat that will become private land in the exchange. The BLM's management capability for long-term conservation of white-margined penstemon west of Alamo Road will, in effect, be lost; the BLM's management capability for conservation of the higher-quality white-margined penstemon habitat east of Alamo Road would be greatly enhanced. Long-term survivability of the species would be questionable without a manageable area of blocked public lands.

Under the equal appraised value alternative, impacts to the white-margined penstemon would be similar to those under the proposed action with the exception that 100 acres of medium-quality habitat and 60 acres of low-quality habitat near I-40 would be retained in public ownership. Impacts to white-margined penstemon on these checkerboard 160 acres would be the same as those for public lands under the no action alternative. There is no white-margined penstemon habitat in the Antares area.

Under the no action alternative, the White-Margined Penstemon ACEC contains a checkerboard land pattern of public and private ownership, making current management and long-term conservation of the species difficult. Under this alternative, long-term survivability of the species is questionable. Historically, development on the private lands has been minimal. Current land sales of existing private lands in the Dutch Flat area are increasing. Impacts to the penstemon on adjacent public lands are also increasing. Consequently, it is important to long-term survivability of the species to develop a manageable area of blocked public lands through the land exchange.

There will be 1,476 habitat units of white-margined penstemon under the proposed action and 1,449 habitat units under the equal appraised value alternative compared to 1,736 habitat units under the no action. Although there are habitat units under the no action, their viability is not as secure as the habitat units under the proposed action. The increased manageability of the blocked public lands establishes a protected core habitat for the species. Furthermore, twice as many acres of high-quality habitat will become public (980 acres) as will be become private (480 acres). Also, there is a net gain of 2,130 acres becoming public within the ACEC.

The tradeoff of the proposed action regarding the white-margined penstemon habitat thus becomes one of overall loss of quantity of habitat versus an increase in quality of habitat and manageability of those areas on public lands.

The similarity in the resulting habitat units for the three alternatives (Appendix I) is a reflection of the difference between overall increase in penstemon habitat becoming private land versus the increase in high quality, more manageable habitat on public lands and long-term conservation for the species. The greater long-term survivability of the penstemon on the resultant blocked public lands favors the proposed action.

Riparian resources

In Arizona, riparian areas are considered to be the most threatened natural plant community. It is estimated that there has been a 90-percent loss, alteration or degradation of native riparian areas in Arizona (state of Arizona 1990).

Riparian habitat is extremely important to wildlife. Although these communities occupy less than 0.5 percent of the total Southwestern landscape, they constitute the state's richest environments in terms of plant and animal productivity and diversity (SCORP 1989). AGFD estimates that 75 percent or more of Arizona's native wildlife species depend on riparian systems during some portion of their lifecycle (state of Arizona 1990).

Under the proposed action, the BLM would acquire 10.7 miles of riparian habitat and lose no riparian habitat.

Impacts to riparian habitat under the equal appraised value alternative would be the same as those identified under the proposed action. There is no riparian habitat in the selected lands that dropped out under this alternative.

Under the no action alternative, the BLM would neither gain nor lose riparian habitat.

Areas of critical environmental concern (ACECs)

All lands acquired within any ACEC would be designated as part of that ACEC and managed with the same goals, objectives and management prescriptions as described in the approved Kingman RMP.

Under the proposed action, approximately 1,200 acres would be acquired within the Hualapai Mountains Research Natural Area/ACEC. The ACEC boundary encompasses about 4,500 acres with approximately 3,300 acres in public ownership. Acquisition of the approximately 1,200 acres is important as the entire ACEC would be under BLM management.

Under the proposed action, approximately 656 acres would be acquired within the McCracken Desert Tortoise Habitat ACEC.

Under the proposed action, within the White-Margined Penstemon Reserve ACEC, approximately 1,800 acres would go out of public ownership and approximately 3,950 acres would come into public ownership. The 1,800 acres would lose its ACEC designation while the approximately 3,950 acres would be designated as part of the ACEC. The boundary of the ACEC will not change, but the acreage of designated ACEC lands will change. In the Kingman RMP, the language used for designating the ACEC was for the public acres within the boundary and not the boundary itself.

Impacts to these ACECs under the equal appraised value alternative would be the same as those identified under the proposed action. None of the selected lands that dropped out under this alternative are within ACECs.

Under the no action alternative, no lands would be acquired into public ownership, nor would any lands be transferred into private ownership in any ACEC.

Further discussion of impacts of the proposed action and no action alternatives to the ACECs and the associated resources can be found in Chapter 4 in the Biological resources section under the Hualapai Mexican vole, Desert tortoise and White-margined penstemon subsections.

Recreation opportunities/access

Proposed action

Dispersed recreational activities, including seasonal hunting, recreational off-highway-vehicle driving, horseback riding, rockhounding, target shooting, camping, picnicking, mountain biking and hiking, would eventually be lost on approximately 70,000 acres of selected/public lands as the lands are sold and developed. Similar opportunities would be gained on approximately 70,000 acres of public lands as the offered/private lands come into public ownership.

A total of 123 miles of roads which cross selected/public lands in the Dutch Flat and Hualapai Valley areas would be lost to public use as parcels are sold and the areas are developed. Several of these roads have traditionally provided access, albeit illegal, to public lands on the periphery of the Dutch Flat project area and would now face potential closure by landowners. Specifically, access to public lands could be lost at: T. 16½ N., R. 17 W., sec. 26 (Creamery Canyon area); T. 16 N., R. 15 W., sec. 31 (Beecher Canyon area); T. 15 N., R. 17 W., sec. 33 (Dutch Flat Road) and T. 15 N., R. 17 W., sec. 18 (Shot-Up Well area).

Public subdivision roads may or may not provide an alternative access route to these locations.

Public access within the Dutch Flat and Hualapai valleys would be limited to established and planned public roadway easements provided by the proponent.

A total of 78 additional miles of road which cross offered/private lands in the Hualapai Mountains and at the south end of Dutch Flat would come into exclusive public ownership. These roads, which could have been closed by private land owners, would now be more secure for public use, assuming that legal access to these roads is available.

As parcels are bought and developed in the project area, the overall amount of recreational uses on surrounding public lands would be expected to increase. With these increases in public use, it is anticipated that there could be increased incidence of accidental wildfire, trash dumping and littering, livestock conflicts involving harassment, theft or gates left open and difficulties with loose/feral dogs and cats on public lands near developed areas. Acquisition of the offered/private lands into public ownership should reduce the likelihood of these incidents occurring on public lands, especially at the higher elevations of the Hualapai Mountains.

Blocking public lands in the higher elevations of the Hualapai Mountains may also provide greater recreational opportunities such as trail development.

Equal appraised value

The impacts under this alternative would be the same as those under the proposed action, except that:

- a total of 117 miles of roads which cross the selected/public lands in the Dutch Flat and Hualapai valleys would be lost to public use and
- dispersed recreation opportunities would be lost on 59,972 acres, while similar opportunities would be gained on 70,245 acres.

No action

Under the no action alternative, there would be no net loss or gain of dispersed recreation opportunities on public lands, but the quality and availability of those opportunities could be lessened within the project area as the alternating private sections are sold and developed. This would be because the public may no longer be able to use adjacent private lands as part of their activities.

A total of 201 miles of existing roads on Dutch Flat, in the Hualapai Mountains and in the Hualapai Valley could become discontinuous, fragmented or closed as subdivision roads are constructed and properties are developed or as property owners choose to deny public access across their property. Hunting activities could become increasingly restricted near new residences. The aesthetic qualities of public lands near private property may be lessened due to the presence of nearby residences, incidents of accidental wildfire, trash dumping, littering and the creation of roads and trails emanating from new residential areas onto adjacent public sections.

The checkerboard ownership pattern of lands in the higher elevations of the Hualapai Mountains could restrict future recreation development opportunities.

Realty

Rights-of-way

Proposed action

None of the 37 rights-of-way on the selected/public lands (Appendix H) will be canceled under either the proposed or no action alternatives.

Under the proposed action, nine of the rights-of-way would be reserved to the U.S. and continue to be administered by the BLM. The remaining 28 would be transferred with the land and be administered by private landowners. All 14 easements on the offered/private lands will be honored and managed to the end of their terms.

Equal appraised value

Under this alternative, numbers 5, 6 and 9 of Appendix H would drop out. Of the 34 rights-of-way on the selected/public lands, seven would be reserved to the U.S. and continue to be administered by the BLM. The remaining 27 would be transferred with the land and be administered by private landowners. All 14 easements on the offered/private lands will be honored and managed to the end of their terms.

No action

Under the no action alternative, no changes in administration of the rights-of-way will occur.

McCracken Mine Road

Abandoning the 6.5-mile portion of McCracken Mine Road from the Alamo Road (T. 15 N., R. 16 W., sec. 1) south to the Planet Ranch Road (T. 14 N., R. 15 W., sec. 5) will facilitate division of the parcels into square, 40-acre parcels. Granting Mohave County a right-of-way for Planet Ranch Road and McCracken Mine Road will provide for perpetual legal access to the McCracken Mountains and McCracken Mine.

The McCracken Mine Road right-of-way crosses 63 acres of Category 1 desert tortoise habitat.

Under the equal appraised value alternative, no changes would occur.

Recreation and Public Purpose lands

It is expected that within 10 to 15 years the R&PP lands near Yucca will begin to be used for expansion of the elementary school and other public purpose facilities under all alternative.

Utility corridors

Proposed action

Under the proposed action, four miles of utility corridor would be transferred into public ownership and 14.5 miles would be transferred into private ownership. The result of the proposed action is a net loss of 10.5 miles of corridor under BLM administration, corresponding to a net gain of 10.5 miles under private land owner control. A utility company would have to acquire the private property through purchase or condemnation or seek an alternate route around the private land. The alternate route, most likely on public lands, could add to the proliferation of utility lines on public lands outside of corridors.

Equal appraised value

Under this alternative, four miles of utility corridor would be transferred into public ownership and 12 miles would be transferred into private ownership. The result would be a net loss of eight miles of corridor under BLM administration, corresponding to a net gain of eight miles under private land owner control.

No action

Under the no action alternative, there would be no changes in management of utility corridors in the exchange area and the problem of purchasing or condemning lands for utility lines would remain as is.

Land tenure adjustments

The proposed action and the equal appraised value alternative would adjust land ownership substantially in the Hualapai Mountains/Dutch Flat area, creating well-blocked areas of public and private ownership (Map 10).

The lands in the Hualapai Mountains and foothills would be managed under the Kingman RMP. The RMP will guide the management of the public lands and associated resources for diverse multiple uses.

The lands in Dutch Flat would be managed under the Mohave County General Plan (March 10, 1995), which states that the ideal future is one that reflects economic growth and development as well as a high quality of life for all residents. It is a future in which the county retains its environmental quality and capitalizes on its wealth of natural and human resources.

The exchange would facilitate more rapid growth in the area of Dutch Flat, but as stated in the Mohave County General Plan, future growth rates are difficult to project. The exchange alone will not determine the growth rate; external factors, e.g., the I-40 corridor, local job market, proximity to utility services, will all affect development in the Dutch Flat area.

Ultimately, the nature, density or intensity of uses allowed in the Dutch Flat area will be determined by the Mohave County Board of Supervisors when they review rezoning requests from the current AR-36A.

Cultural resources

In consultation with the Arizona State Historic Preservation Office (SHPO), a sample survey was designed to test assumptions about the selected/public lands that would be removed from federal ownership. The survey was conducted only on lands that the BLM would relinquish. As a result of 15 years of work in the area, it was proposed that the probability of identifying numerous significant cultural properties was extremely low; previous surveys had found no sites. Of the total selected/public lands (approximately 70,000 acres), 13,856 acres (approximately 20 percent) were intensely surveyed.

The results of the sample survey confirmed expectations of low cultural resource potential. A total of 16 cultural properties – nine prehistoric temporary camps, four railroad associated sites, two World War II aerial gunnery training sites and one historic road – were found.

Dutch Flat area

Proposed action

Three prehistoric temporary camps, four historic sites associated with the railroad, two World War II aerial gunnery training sites and one historic road would be negatively impacted by transferring out of federal ownership. These cultural properties would no longer be protected by public laws and BLM management. A data recovery program would be completed to mitigate the negative impacts of transfer.

An increase in population would probably negatively impact cultural properties on public lands adjacent to the selected/public lands.

There is a high probability that significant cultural resources exist on the mountain and foothill areas that would be acquired; these would be protected and managed by the BLM. The Hualapai Tribe has stated that the Hualapai Mountains and foothill areas are sacred and they believe acquisition of additional lands in these areas would have a beneficial effect.

Private development would not take place in the mountains and foothills and new roads would not be bladed along section lines for access.

Equal appraised value

Impacts would be the same as under the proposed action except that three prehistoric temporary camps and four historic sites associated with the railroad would not be negatively impacted by transferring out of federal ownership. Development of surrounding and adjacent privately owned sections would probably result in increased illegal artifact removal and disturbance from vehicles.

Two World War II aerial gunnery training sites and one historic road would be negatively impacted by transferring out of federal ownership. A data recovery program would be developed and completed prior to transfer of these properties.

No action

Three prehistoric temporary camps and seven historic sites would not be negatively impacted by a change of ownership. These cultural properties would continue to be managed in accordance with federal laws and BLM policies. Development of surrounding and adjacent private sections would probably result in negative impacts by increasing illegal artifact removal. Vehicles would probably drive over site surfaces, causing direct damage to artifacts and features and indirect damage by increased erosion.

In the mountains and foothills, additional sections with significant cultural properties would not be acquired and might be destroyed by private development. Some of the private sections would probably be developed with roads bladed along their perimeters, some of which would probably be public access roads, increasing accessibility to formerly remote sites on nearby public lands. An increase in vandalism, pothunting, illegal artifact collection and erosion would probably occur.

Antares area

Proposed action

Six prehistoric temporary camps would be negatively impacted by being transferred out of federal ownership. These sites would no longer be protected by public laws and BLM management. A data recovery program would be completed to mitigate the negative impacts. An increase in population would probably negatively impact cultural properties on adjacent public lands.

There is a high probability that significant cultural resources exist in the mountain and foothill areas that would be acquired; these would be protected and managed by the BLM. The Hualapai Tribe has stated that the Hualapai Mountains and foothill areas are sacred and they believe acquisition of additional lands in these areas would have a beneficial effect.

Private development in the Hualapai Mountains and foothill areas would not take place and access roads would not be bladed along section lines.

Equal appraised value

Impacts would be the same as those under the proposed action except that six prehistoric temporary camps would not be negatively impacted by a change of ownership. These cultural properties would continue to be managed in accordance with federal laws and BLM policies. Development of surrounding and adjacent privately owned sections would probably result in increased illegal artifact removal and disturbance from vehicles.

No action

Six prehistoric temporary camps would not be negatively impacted by a change of ownership. These cultural properties would continue to be managed in accordance with federal laws and BLM policies. Development of surrounding and adjacent private sections would probably result in negative impacts by increasing illegal artifact collection. Vehicles would probably drive over site surfaces, causing direct damage to artifacts and features and indirect damage by increased erosion.

In the mountains and foothills, additional sections with significant cultural properties would not be acquired and might be destroyed by private development. Some of the private sections would probably be developed with roads bladed along the perimeters, some of which would probably be public access roads, increasing accessibility to formerly remote sites on nearby public lands. An increase in vandalism, pothunting, illegal artifact collection and erosion would probably occur.

Mineral resources

The offered/private lands are primarily in the mountainous areas and have potential for locatable (metallic) minerals. Under the proposed action, 24 parcels totalling 8,800 acres in the Hualapai Mountains with a moderate or high potential for metallic minerals would come into public ownership. While none of these parcels are currently in production and actual ore bodies are not precisely defined, the lands are considered valuable for prospecting for locatable minerals.

Also, two sections of selected/public lands with a high potential for sand and gravel deposits would be transferred to private ownership. These sections, T. 18 N., R. 17 W., sec. 30 and T. 18 N., R. 18 W., sec. 36, were noted for having good access, a history of previous use and good quality material.

In the transitional zone between the flats and the mountains, a potential was identified for granite boulders as decorative rock. Both offered/private and selected/public lands are in the transitional zone, but the offered/private lands contain about four times as much acreage (3,500 acres) favorable for granitic boulders as do the selected/public lands (950 acres). Boulder sales are likely to occur on private lands in this area. Such sales, discretionary on BLM-managed lands, are unlikely to occur in this area due to coincidence of the boulder terrain with desert tortoise habitat.

In the Antares area, six sections of selected/public lands in T. 25 and 26 N. were identified with a high potential for sodium (rock salt) deposits. These sections are on the extreme southeastern periphery of the known deposit, and the loss of these sections would not be crucial to the future development of this deposit.

A tract of less than 40 acres was also identified with a high potential for gold deposits in T. 24 N., R. 15 W. No development of this potential was noted on the selected/public lands. The loss of these lands is relatively insignificant compared to the huge amount of mineral lands to be received in the Hualapai Mountains.

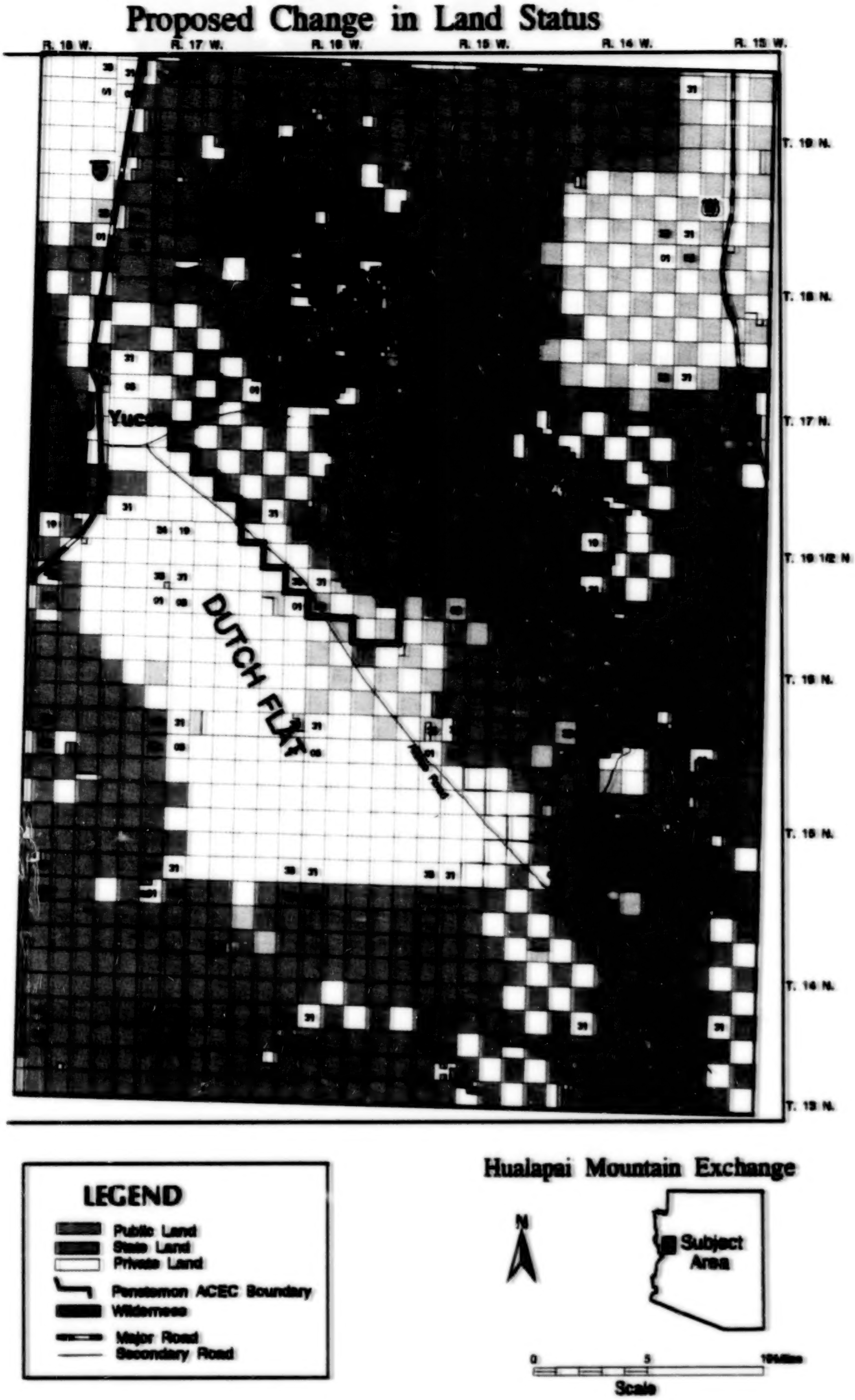
The proposed exchange will provide legal access to those areas in the Hualapai Mountains that were previously a checkerboard of public and private lands. This will aid in the prospecting, development and management of mineral values on both the public and private lands involved.

Under the no action alternative, there is currently little legal access into many of the lands described in this proposal, serving to impede development and management of mineral resources on these lands.

Soil erosion potential

Soil erosion ratings would not change due to the proposed exchange. What would be affected is the potential for soil loss under a blocked-up land pattern

Map 10. Hualapai Mountains/Dutch Flat Area Proposed Change in Land Status



versus the checkerboard pattern as a result of ground-disturbing activities. Road construction will take place under any of the alternatives and will be used to present the effects of the land exchange on soil erosion potential.

Road construction would expose the soil by removing all vegetation. The total mileage of roads and placement of roads would be different by the blocked ownership pattern under the proposed action and intermingled ownership pattern under the no action. For purposes of analysis, the following factors were used for each section of land: the internal roads would be 24 feet wide and the section line roads would be 24 feet wide; under the blocked ownership pattern, 10 miles of road would be needed per section, while 12 miles of road per section would be needed under the intermingled ownership pattern. This two-mile difference is due to the distance needed on lands that would remain in public ownership but would still need a road built on the section line to access the private lands.

For analysis purpose, it is assumed that all exterior and interior parcel easements will have roads built on them. It is also assumed that in the mountain properties, roads will not be built along the section lines or on due north-south or east-west alignments. The roads in the mountains will be built with respect to the topography, which in some cases would mean more and in others less roads than a typical section of flat land in the valley. So the assumption is that an equal number of miles of roads would be built to access the mountain properties as in the flat properties.

Proposed action

The public would acquire 43,600 acres with severe erosion potential while transferring to private ownership 1,300 acres with severe erosion potential. The public would also acquire 17,300 acres with moderate erosion potential and 10,800 acres with slight erosion potential. Approximately 37,700 acres with moderate erosion potential and 28,990 acres with slight erosion potential would go into private ownership.

Road building would occur on the areas going into private ownership at the rate of 10 miles per section, averaging a 24-foot width. Roads would be built on approximately 60 acres of soil with severe erosion potential, 1,710 acres with moderate erosion potential and 1,300 acres with slight erosion potential.

Equal appraised value

The impacts would be the same as those under the proposed action with the following exceptions. The public would acquire 42,879 acres with severe erosion potential while transferring to private ownership 1,300 acres with severe erosion potential. The public would also acquire 16,420 acres with moderate erosion potential and 10,080 acres with slight erosion potential.

No action

No change would occur in ownership of lands and the erosion potential for all lands would remain the same.

Road building would occur over the entire intermingled ownership area on both private and public lands. Lands would be needed across the public lands to access the private lands. Roads would be built on approximately 2,377 acres of land with severe erosion potential, 945 acres with moderate erosion potential and on 600 acres with slight erosion potential.

Floodplains

Management of floodplains for public lands is covered in Executive Order 11988, May 24, 1977, taken into account during the RMP planning process. The lands in the exchange area were classified as available for disposal. If public lands in floodplains are disposed of, the administering federal agency shall reference in the conveyance those uses restricted under identified federal, state or local floodplain regulations. So the following will be in the conveyance documents if this exchange is approved: "Lands purchased in the exchange area is subject to restrictions which may be imposed by the Mohave County Floodplain Administrator in accordance with the Floodplain Ordinance for Mohave County Arizona, as adopted by the Mohave County Board of Supervisors under Resolution No. 84-10 on December 3, 1984, as amended under Resolution No. 87-3 on May 18, 1987".

Proposed plan amendment

The following are the selected/public lands in the proposed plan amendment in floodplain zone A.

T. 15 N., R. 15 W., sec. 8, none
T. 15 N., R. 15 W., sec. 16, none
T. 15 N., R. 15 W., sec. 18, none
T. 15 N., R. 15 W., sec. 22, none
T. 15 N., R. 15 W., sec. 28, none
T. 15 N., R. 15 W., sec. 20, none
T. 15 N., R. 15 W., sec. 30, none
T. 15 N., R. 15 W., sec. 32, none
T. 16 N., R. 16 W., sec. 16, 60 acres

T. 16 N., R. 16 W., sec. 36, none
T. 16 N., R. 18 W., sec. 16, 70 acres
T. 16½ N., R. 18 W., sec. 28, 45 acres
T. 16½ N., R. 17 W., sec. 22, 25 acres
T. 16½ N., R. 16 W., sec. 26, five acres
T. 16½ N., R. 16 W., sec. 36, 20 acres
T. 17 N., R. 18 W., sec. 24, 80 acres
T. 18 N., R. 18 W., sec. 26, 60 acres

Proposed action

A total of 6,731 acres of floodplains would be conveyed from public to private domain; 2,075 acres of private lands would be conveyed to public lands.

Equal appraised value

A total of 6,109 acres of floodplains will be conveyed from public to private domain; 2,075 acres of private lands would be conveyed to public lands.

No action

No acreage of floodplains would change ownership.

Cumulative impacts

Two other BLM land exchanges – ASARCO (Ray) and Cerbat Mountains – are being processed near the Hualapai exchange.

The ASARCO exchange lands (Map 1) are in the McCracken Mountains, T. 14 N., R. 15 W., secs. 3, 8, 10, 15, 23, 25 and 27 and T. 14 N., R. 15 W., secs. 19 and 31. The cumulative effect of the ASARCO and Hualapai Mountains exchanges would be to block up Category I desert tortoise habitat within the McCracken Mountains ACEC.

The Cerbat Mountains exchange lands are near the Antares area of the Hualapai exchange in T. 24 N., R. 15 W., sec. 22, W½, and sec. 32. The approximately 960 acres are within the Walapai Ranch and would therefore add to the problems associated with private lands within a ranch. The long-term viability to continue to ranch this allotment would decrease.

Ranching

Cedar Canyon allotment – The Cerbat Mountains exchange contains approximately 5,448 acres of selected/public lands in the Cedar Canyon allotment in T. 24 N., R. 16 W., secs. 2, 4, 6, 8, 16 and 18, T. 24 N., R. 17 W., secs. 2 and 12 and T. 25 N., R. 16 W., secs. 24, 26 and 36. These lands would not be subdivided in the foreseeable future and would be used for ranching; therefore, the overall stocking rate of this ranch would not be affected. This exchange would reduce the amount of BLM lands in the allotment from 51 to 45 percent, taking into account the reduction of public lands from the current 55 percent to 51 percent resulting from the proposed action alternative in the Hualapai exchange. Assuming a grazing lease is secured for the additional private lands resulting from the Hualapai exchange, which would change from the current 44 percent to 48 percent, the Cerbat Mountains exchange would increase the private lands controlled by the rancher from 48 to 54 percent. Under the equal appraised value alternative of the Hualapai exchange, the amount of public lands in this allotment would decrease from 55 percent to 49.

Walapai Ranch allotment – The Cerbat Mountains exchange includes 960 acres of selected/public lands in the Walapai Ranch allotment in T. 24 N., R. 15 W., secs. 22 and 28. These lands would be subdivided and the rancher would have to secure a grazing lease or deeded grazing rights with individual purchasers of these properties for forage to be allocated from them. If no such arrangements are made, the amount of private lands uncontrolled by the rancher would increase from two percent to five under the proposed action and equal appraised value alternatives. This would reduce the stocking rate of the ranch from 236 CYL to 228 CYL and add to the problems of raising livestock on a ranch with private lands uncontrolled by the rancher. Taking into account the changes in land ownership resulting from the Hualapai exchange, BLM lands in this allotment would decrease from 19 percent to 16 percent under the proposed action alternative and from 19 percent to 18 under the equal appraised value alternative. This would decrease the amount of BLM lands from the current 36 percent to 19 percent.

Chicken Springs allotment – The ASARCO exchange includes approximately 6,400 acres of offered/private lands in the Chicken Springs allotment in T. 14 N., R. 15 W., secs. 3, 9, 11, 15, 23, 25, 27 and 35 and T. 14 N., R. 14 W., secs. 19 and 31. Taking into account the changes in land ownership due to the Hualapai exchange, which would change the amount of BLM lands in the allotment from the current 70 percent to 77 percent, the ASARCO exchange would further increase BLM lands from 77 to 81 percent.

Water resources

The proposed action and equal appraised value alternatives, in conjunction with other ongoing land exchanges as well as other land development in Mohave County, will have the following cumulative impacts.

– The BLM will gain water sources and rights in the Hualapai and McCracken mountains/foothills and lose water sources and rights in the Dutch Flat and Antares areas, primarily due to the Hualapai, Cerbat Mountains and Ray land exchanges.

– Groundwater use in the Sacramento Valley will increase substantially, primarily as the result of residential development in Golden Valley and Dutch Flat. Groundwater use will increase in Dutch Flat as a result of residential development on both the selected/public lands and lands that are currently private. The residential development in Golden Valley will occur even if the Hualapai, Cerbat and Ray land exchanges are not completed.

– Groundwater use, surface runoff and sediment load will increase in the Sacramento and Hualapai valleys at a faster rate as a result of the Hualapai, Cerbat and Ray land exchanges. This is because the blocking up of private lands will accelerate residential development; such development would occur more slowly under the current checkerboard land pattern.

– Watershed condition (i.e., groundwater use, groundwater quality, surface runoff, sediment load) will remain essentially the same on blocked-up public lands because the lands under BLM management will not be subject to residential development.

Recreation opportunities/access

Either the proposed action or equal appraised value alternative would have a cumulative impact on recreation opportunities in Mohave County when considered with the ongoing Cerbat Mountain and ASARCO Ray land exchanges. The cumulative effect would be a lessened availability of desert valley recreation opportunities and a greater consolidation of public land recreation opportunities in higher elevation mountainous terrain.

A second cumulative impact to recreation opportunities is created by these land exchange efforts. Consolidation of public land ownership and management in the higher elevation mountainous terrain would provide a greater degree of protection for the aesthetic qualities of the landscape for visitor appreciation. Conversely, by exchanging valley lands to private ownership, thereby effectively concentrating human occupation, it is anticipated that these human populations will adversely affect the aesthetic qualities of the peripheral public lands through illegal dumping, wildfire starts, vandalism, trail proliferation, etc.

Mitigation

The following mitigation actions may be taken.

Ranching

The integrity of allotment boundaries could be maintained by reserving an easement for the existing allotment boundary to the federal government in instances where such an easement could maintain the integrity of the fence and the fence would be necessary to control livestock in an area where it is anticipated that grazing would continue over the long term. Moving the allotment boundary fence to non-selected public lands at no cost to the rancher would be considered where it is anticipated that, as a result of the exchange, development would preclude livestock grazing from an area in the short term.

Recreation opportunities/access

The proponents will assure legal road access for the public to T. 16½ N., R. 17 W., sec. 26, NE¼; T. 16 N., R. 15 W., sec. 31, W½; and T. 15 N., R. 17 W., sec. 33, SE¼. The BLM and the proponents will equally share the costs of road construction, if necessary.

Cultural resources

Prior to transferring lands with known cultural properties to private ownership, archaeological research would be carried out at each cultural property in accordance with a treatment plan developed in consultation with the SHPO.

Hazardous materials

If the site containing hazardous materials is to be transferred to private ownership, it will be cleaned up before the transfer is completed.

Realty

Rights-of-way – If the 6.5-mile portion of McCracken Mine Road from Alamo Road to Planet Ranch Road is abandoned by Mohave County, alternative access will be granted by the BLM. The alternative access is approximately 34,500 feet long on BLM lands by 80 feet wide for new disturbance of 63 acres. As it is all within Category I desert tortoise habitat, the compensation range can be between three and six times the acreage of disturbance or 189 to 378 acres. Since the BLM would acquire approximately 600 acres of Category 1 habitat, no additional acreage will be required for the road right-of-way.

Utility corridors – The following measures would mitigate problems associated with utility corridor management in the exchange area.

– The BLM would not transfer the following selected/public lands to private ownership.
T. 15 N., R. 17 W.,
sec. 6 W½NW¼, SE¼NW¼, E½SW¼, W½SE¼;
sec. 8 SW¼NW¼, SW¼;
sec. 16 W½SW¼, SE¼SW¼;
sec. 22 SW¼SW¼;
sec. 34 NE¼NE¼.

T. 16 N., R. 18 W.,
sec. 16 NE¼NE¼.

T. 16.5 N., R. 18 W.,
sec. 22 lot 4, SW¼NW¼;
sec. 28 NW¼, NW¼SW¼.

T. 17 N., R. 17 W.,
sec. 30 lots 1, 9, 10, 12, 18 and 19, NW¼NE¼.

T. 18 N., R. 17 W.,
sec. 20 NE¼, W½SE¼.

BLM (Antares)
T. 24 N., R. 14 W.,
sec. 18 W½NE¼, N½SE¼, SE¼SE¼.

– The BLM would seek to acquire the following private lands within the corridors.
T. 15 N., R. 17 W.,
sec. 7 N½NE¼, SE¼NE¼;
sec. 17 NE¼, NE¼SE¼;
sec. 21 SW¼NE¼, E½NW¼, N½SE¼, SE¼SE¼.

Irretrievable/irreversible commitments of resources

The BLM would permanently relinquish all resources and management authority on the selected/public lands to private ownership, mitigated by gaining the resources and management authority on the offered/private lands.

Relationship between short-term uses and long-term productivity

The short-term uses and long-term productivity of the exchange area are associated with the future foreseeable actions for the lands. Short-term use (up to 10 years) of the lands in private ownership (whether or not the exchange takes place) is sales in 40- and 160-acre parcels. These lands will eventually have roads, utilities, houses, etc. Long-term productivity of the lands is related to whether the proposed action, which will consolidate the development, is chosen or whether the no action alternative is chosen, which means the development will be dispersed.

The public ownership block would allow for long-term multiple use by the public. Management of this block would be in accordance with the multiple-use mandate with respect to all applicable laws. Under the no action alternative, management would be more reactive due to the need to respond to private land owner requests for rights-of-way, etc.

The private ownership block would allow for efficient sales and subsequent development of the area. Under the no action alternative, the area would be developed with the involvement of the BLM having to grant rights-of-way (roads, utilities, etc.), which would include all associated environmental analysis at public cost.

Unavoidable adverse impacts

Proposed action

The land exchange would create a large blocked area of private ownership on the Walapai Ranch, which would eventually be sold and developed, making the area unsuitable for grazing cattle and effectively putting the permittee out of the cattle ranching business on the Walapai allotment.

The exchange will also cause (in the long term) reductions in permitted grazing use on the Boriana A, Hackberry, Cedar Canyon, Happy Jack Wash and Crossman Peak allotments because the selected/public lands on these allotments will be developed and fenced, making them unsuitable for grazing.

Equal appraised value

The impacts from this alternative would be the same as those under the proposed action except that no lands would be exchanged in the Cedar Canyon allotment and the amount of BLM lands in the Boriana Unit A allotment would increase.

Chapter 5 -- Consultation and coordination

This chapter documents involvement by the public, other agencies and interested parties in determining issues and providing information for the draft EIS for the proposed exchange.

Notices

A notice of intent (NOI) to prepare an EIS and notice of public scoping meetings was published in the *Federal Register* on Wednesday, June 11, 1997 (Vol. 62, No. 112, pages 31839 and 31840), officially starting the public scoping period.

Newspaper announcements of the public scoping meetings were published on June 11 and 27, 1997 in the *Kingman Daily Miner*. Coverage was also provided by local radio stations KGMN and KZZZ. Notices were posted in the offices of the BLM, AGFD, Mohave County Extension Service and Mohave County Planning and Zoning. Letters containing a fact sheet and comment card were sent to the mailing list of about 200 on June 11, 1997.

An NOI to amend the Kingman RMP was published in the *Federal Register* on Friday, February 27, 1998 (Vol. 63, No. 39, pages 10038 and 10039).

In March 1998, an update to the Hualapai Mountains exchange including status, issues to be analyzed in the draft EIS and the proposed schedule was sent to the mailing list. In addition, the update explained why the University of Arizona was being brought onto the project and how their data would be used.

On April 17, 1998, the draft EIS was sent to the mailing list.

On April 30, 1998, the notice of availability and notice of public meetings was published in the *Federal Register* (Vol. 63, No. 83, page 23794). This notice, filed by the BLM, notified the public that the draft EIS was available for comment and review and listed the times, dates and location of dthree public meetings to hear comments on the draft EIS.

On May 8, 1998, the EPA published a notice of filing in the *Federal Register* (Vol. 63, No. 89, pages 25474 and 25475), EIS No. 980161, Draft EIS, BLM, Arizona, Hualapai Mountains Land Exchange/Plan Amendment Implementation, Kingman and Dutch Flat, Mohave County, Arizona, due July 27, 1998; contact: Don McClure (520) 692-4400. This EIS was inadvertently omitted from the April 24, 1998 *Federal Register*. The official 45-day NEPA review period is calculated from April 24, 1998, so the BLM 90-day review period, which is policy on EIS level plan amendments, was also calculated from April 24.

On May 26 and 27, 1998, a notice of public meeting dates, times and locations was posted in the U.S. post offices in Wikieup and Yucca, Arizona and the BLM office in Kingman.

On June 1, 1998, the BLM issued a news release regarding the scheduled public meetings concerning the draft EIS. Dates, times and locations of the public meetings were published in the *Kingman Daily Miner*.

Public scoping meetings

Three public scoping meetings were held on June 30, July 1 and July 2, 1997 in Wikieup, Kingman and Yucca, respectively, to hear public comments and concerns about the project. Each meeting started at 6 p.m. with a scheduled ending time of 8 p.m. or until attendees had finished discussing the exchange proposal. The first 30 minutes of each meeting were devoted to reviewing exchange information in the form of maps, a fact sheet and presentation boards. At approximately 6:30 p.m., BLM staff gave a short presentation and the meeting was opened to public comments and questions.

At every meeting, public concerns and comments regarded land sales and subsequent development of the area more than the exchange of lands.

Wikieup (Owens School, 14109 East Chicken Springs Road)

The meeting doors were opened shortly before 6 p.m. on June 30, 1997 with 10 people in attendance. At 6:30 p.m., BLM Kingman Field Office Manager John Christensen gave a brief overview of the exchange and opened the meeting to public questions, comments and concerns, which included the following.

-- How will this exchange affect local rancher Bob West?

-- What types of land would come into public ownership versus the type of lands leaving public

ownership?
– What size parcels are being sold now?
– Where will the water for development of this area come from?
– How will the amount of travel along Chicken Springs road be affected?

No comment cards were received at this meeting.

Kingman (BLM office, 2475 Beverly Avenue)

The meeting doors were opened at 5:45 p.m. on July 1, 1997 as attendees began to arrive; 20 people attended. After the 6:30 presentation, the meeting was opened to public questions and comments, which included the following.
– How will access across the area to private ownership change? Will roads be closed or improved?
– What will be the ultimate population of the developed lands?
– Is there sufficient water for development?
– Who will maintain Alamo Road?
– Are there plans for industrial development along Alamo Road?
– Are there possibilities for the county to get revenue (i.e., surcharge) from the sale of each parcel?

No comment cards were received at this meeting.

Yucca (Brooks Realty Office, 12470 South Yucca Frontage Road)

People began arriving at the meeting at about 6 p.m. on July 2, 1997; five people were in attendance. After the 6:30 presentation, the meeting was opened to questions and comments, which included the following.
– Is the exchange good for the public? The people of Yucca?
– What is the water availability and quantity?
– Wouldn't consolidated, developed land bring in more, bigger business and industry?
– How would the taxes coming into the fire district be affected?
– Couldn't county services more easily deal with blocked areas of land rather than respond to remote residences (e.g., fires)?
– How will the exchange affect the county tax base?
– Who are the major stockholders in Ironhorse Investors, Inc.?
– What about the bill in the state legislature containing language on "no net loss" of private land in Arizona?

No comment cards were received at this meeting.

During the scoping period, 30 comment letters were received. The issues and information were carried forward to the draft EIS.

Public meetings to discuss the draft EIS

On June 9, 1998, a public meeting was held in Wikieup, Arizona, which no one attended.

On June 10, 1998, a public meeting was held in Kingman, Arizona with nine people in attendance. Most concerns were about the effect of the proposed land exchange on the Antares area, including the developer retaining the grazing rights, which causes livestock/people interaction. There were also concerns about the infrastructure necessary and the potential for more people to move to the area.

On June 11, 1998, 13 people attended a public meeting in Yucca, Arizona. The meeting was mostly a question-and-answer session with the land exchange proponent responding to questions concerning development. Comments included the following.
– The exchange is good for people as it eliminates the checkerboard ownership, which lessens problems. Response: Thank you for the comment.
– A concern that blocked public lands will become wilderness and that access will be stopped. Response: The BLM has no plans to study any wilderness expansion. Wilderness designations are made by Congress.
– Land from Golden Valley south of T. 18 N., R. 17 W. should be retained as residential and not developed as industrial properties. Response: This is outside the scope of the exchange as zoning is the responsibility of Mohave County Planning and Zoning.
– Retain BLM parcels within the selected lands block for parks, etc. Response: The exchange proponent is working with Mohave County to identify lands for these purposes.
– Development of private land will impact wildlife. Response: Impacts on wildlife were studied in the draft EIS, including how wildlife will be affected if the exchange does or does not go through.
– Eliminating the checkerboard ownership will reduce private landowner/grazing conflicts. Response: Thank you for your comment. The draft EIS presents a section entitled People and cattle which addresses this issue.
– Would like to see subdivision size limited. Response: Thank you for your comment. Follow-up: This comment is being worked on by Mohave County within the context of the Dutch Flat Area Plan

– Would like to see some BLM land remain around Yucca for community facilities. Response: Through the approval of the Kingman RMP, approximately 160 acres are designated near Yucca for these purposes.
– Limit industrial development west of the railroad. Response: This is outside the scope of issues for the EIS and is the responsibility of Mohave County Planning and Zoning.

Other meetings/briefings

Ranching community

All ranchers in the exchange area were sent notification of the public scoping period and meetings. All ranchers with selected/public lands in their allotments were sent notices of the exchange proposal.

All ranchers with operations within the exchange area were invited to attend a June 16, 1997 meeting at the Kingman BLM office. Of the 10 ranchers who could be affected by the exchange, five attended the meeting and expressed their concerns, which included the following.

– Won't more problems from environmental groups arise when BLM lands are blocked?
– How long will ranching be able to continue after the lands are blocked up?
– Are there any guarantees that the lands for grazing won't be lost?
– During the EIS process, the probable sources of water and water consumption should be ascertained and analyzed. The scenario for water development is different in a blocked area than in a dispersed development.
– How will the exchange impact the value of the grazing permit?
– More coordination is needed.
– The exchange process needs to be better explained.
– There could be an economic loss as ranch values may decrease.
– Statistics are available on development of 40-acre parcels (e.g., how long they are vacant after sale).
– The integrity of the ranches should be looked at, with and without the exchange.
– The proponents will keep cattle on the allotment to get the tax break; after the inventory is sold, the proponents will cease caring and will actually help to get the cows out.
– Do not consider any restructuring (boundary changes or number of cattle changes) of allotments.
– Repair costs to the permittee will increase in the blocked ownership situation and should be analyzed.
– What about compensation for fences and other developments on lands going from private to public?

A meeting for the ranchers potentially affected by the exchange was held at 5 p.m. on November 3, 1997 at the BLM Kingman Field Office to follow up on questions and comments received from the June 16 meeting. The topics included:

– use of water and associated improvements,
– compensation for range improvements on lands proposed to be transferred into private ownership,
– allotment boundary easements,
– grazing administration (two-year waiver),
– existing easements and developments and
– schedule and process.

On January 9, 1998, a meeting was held in Kingman at the Mohave County Library at the request of the ranchers. Only three of the 10 ranchers with ranches being affected by the exchange were among the 37 people in attendance. The focus of the meeting was to discuss the economic effects of the exchange on the ranches and the services provided by Mohave County. Dr. Jim Chamie and Dr. George Frisvold from the University of Arizona discussed their possible involvement in this land exchange. The result of the meeting was to schedule a followup meeting for January 22 to develop a scope of work for assessing ranch economic impacts due to the exchange and alternative.

On January 22, 1998, 16 people attended a meeting at the BLM Kingman Field Office. Doctors Chamie and Frisvold from the University of Arizona agreed to take the information provided at the meeting and develop a scope of work based on questions from the ranchers and the Mohave County representatives.

On February 18, 1998, the BLM received a preliminary draft Statement of Work from the University of Arizona (UofA). Upon review, the BLM requested one change, which was the due date of the report (from June 30, 1998 to May 15, 1998). The Statement of Work was received from the UofA on March 5 and approved on March 11 by the BLM. The UofA commenced work, including interviews of the ranchers, and provided the report to the BLM on May 29, 1998. The report was copied and hand delivered to the affected ranchers between June 1 and June 3, 1998.

On June 10, 1998, the professors from the UofA presented the results of their study at a meeting held for the 10 affected ranchers. In addition, the professors offered to meet with each rancher individually. The results of the report have been incorporated into the final EIS.

Mohave County

Representatives of the Mohave County Public Works, Planning and Zoning, Public Land Use Committee, Economic Development Authority, County Attorney's office and Board of Supervisors have been involved in the EIS process.

1997

1/10 At the quarterly county coordination meeting in the county conference room in Kingman, general information and maps were presented concerning the exchange.

6/11 Scoping letters were sent to representatives of the Board of Supervisors, Public Works and Planning and Zoning. No one from the county attended the public scoping meetings in an official capacity.

6/17 At the Public Land Use Committee meeting, an informational briefing included maps and a fact sheet.

7/25 The BLM met with representatives of Mohave County Planning and Zoning.

8/18 Three Mohave County representatives attended the regular Interdisciplinary Team meeting. The intent of the meeting was to solicit concerns and information about impacts of the proposed exchange.

9/10 The BLM met with constituents at the Mohave County Public Works conference room, 3675 E. Andy Devine Ave., Kingman. Discussion concerned a request to abandon the part of McCracken Mine Road within the selected/public lands area. Attendees adjourned to the Economic Development Authority office, where it was suggested that this right-of-way is tied to the exchange and should be resolved as part of the exchange.

9/17 The BLM met with Mohave County representatives as a follow-up to the September 10 meeting to discuss the parcel plat process and the issues raised in the letter from Public Works dated September 4. Most of these issues are tied to development rather than the exchange. A follow-up letter dated September 25 was sent to Mike Sawhill encouraging him to work with the county to discuss the development plans.

10/21 The BLM met with county representatives at the Mohave County Public Works conference room, 3675 E. Andy Devine Ave., Kingman. McCracken Mine Road was discussed and it was agreed that the outcome of this meeting would be written up and signed by the attendees. All agreed to Mike Sawhill applying for a FLPMA Title V right-of-way to be processed as part of the exchange EIS. Rights-of-way from Sawhill and from ASARCO will be granted upon completion of the exchange.

1998

2/17 At the request of the Public Land Use Committee, a general update on the exchange was presented. Also presented were the results of the appraisal of the exchange properties.

5/19 A presentation was made to the Public Land Use Committee concerning the issuance of the draft EIS. The BLM presented the times, dates and locations of the public meetings, the length of the comment period, how to comment substantively and responded to general questions concerning the exchange.

6/22 A meeting with the Mohave County Flood Control District Engineer addressed concerns about the floodplains in the Dutch Flat area.

7/21 At the request of the BLM, one of the University of Arizona professors who prepared the ranching study presented the results and answered questions at a Public Land Use Committee meeting.

In addition, the Hualapai Mountain Land Exchange was discussed at Public Land Use Committee meetings on October 21, November 18 and December 16, 1997 and January 20, June 16 and September 15, 1998. The BLM attended each of these meetings and was involved in the discussions.

Resource Advisory Council

The Resource Advisory Council (RAC) was designated by the Secretary of the Interior to provide advice to the BLM State Director on land management issues. The RAC toured the exchange area on June 20, 1997, received information on issues regarding the exchange and will be kept informed throughout the process.

On May 13, 1998, the BLM Kingman Field Office Manager updated the Resource Advisory Council on the land exchange. The RAC expressed a very positive feeling about the Hualapai exchange and contacts made with Mohave County as well as sensitivity to the ranching community. An example of the BLM's efforts to understand and include the ranchers' concerns is the contract that the BLM had with the University of Arizona to collect rancher economic data and present unbiased information that the ranchers were able to provide.

Native American consultation

The BLM Kingman Field Office Manager and Cultural Heritage Specialist set up and attended meetings with the Hualapai Tribe at Peach Springs, Arizona and the Colorado River Indian Tribes at Parker, Arizona.

The Mojave Tribe at Needles, California was contacted, but was unable to attend a meeting. They were sent a map and description of the proposed land exchange and the project was explained to them via telephone.

The consultation meetings were set up to explain the proposed land exchange, discuss the cultural survey to be done and to request comments about the project. At these meetings, and in letters sent to the tribes, requests were made for any concerns about religious or traditional use on the proposed land exchange parcels.

The Hualapai Tribe responded positively at the meeting and stated that they thought acquiring additional lands in the Hualapai Mountains and foothill areas would have a beneficial effect. They consider the areas sacred and were pleased that the lands would not be developed. They also mentioned the possibility of establishing a Hualapai cultural center in the mountains. They expressed no other specific concerns.

The Colorado River Indian Tribes also agreed that the proposed land exchange would be positive. Their only concern was that a special effort be made during the cultural resource survey to identify any Native American trails.

Habitat Partnership Committee

On July 17, 1997, information about the proposed Hualapai Mountains Land Exchange was presented to the Kingman Habitat Partnership Committee.

On November 20, 1997, 11/20/97, 24 people attended at meeting at the BLM Kingman Field Office. The topic of the proposed Hualapai exchange dominated the meeting with most questions and comments concerning the effect on ranches and services provided by Mohave County. It was decided that a rancher member of the Habitat Partnership Committee would contact the 10 ranchers with ranches in the exchange area. Only two ranchers responded to the contact, which was made by letter. In response to a suggestion that the BLM or the proponents bring in a specialist in ranch economics, it was recommended that the University of Arizona provide this expertise.

On January 20, 1998, a short update was given on the progress of bringing in an authority on ranch economics.

Arizona Department of Environmental Quality

On June 17, 1998, the Hualapai Mountains Land Exchange was part of the agenda for ADEQ's monthly meeting of the Colorado River Management Zone. The meeting was informational with the BLM providing an update and answering questions about the exchange, which was placed on the agenda for the July 15 meeting with the group directed to review the draft EIS.

On July 15, 1998, the land exchange was discussed at ADEQ's monthly meeting of the Colorado River Management Zone. In attendance were the BLM, the exchange proponent and a representative from Mohave County Planning and Zoning. The meeting was questions and answers; no issues were raised that were not covered in the draft EIS and no letter of concern or comment was received from this group.

Congressional notification

On May 6, 1998 members of the Statewide Arizona Exchange Team briefed Congressional representatives on all proposed land exchanges (BLM) including the Hualapai Mountain Land Exchange.

Environmental justice

On February 11, 1994, Executive Order 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations: (Order)" was published in the *Federal Register* (59 FR 7629). The order requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.

Compliance with this order was accomplished through opportunities to receive public information of the proposed action, a public participation plan that included landowners adjacent to the project area and individuals of minority populations. A review determined that potentially adverse impacts resulting from the exchange do not disproportionately affect Native American tribes or minority and/or low-income groups.

Yucca, Arizona

The BLM gratefully acknowledges the assistance of Mike File, superintendent of schools, Susan Yeates, head teacher/Yucca School District and Tom Dorris, clerk of the Yucca Fire District for their contributions to this document.

Preparers and reviewers

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Bill Ruddick, Supervisory Realty Specialist, Business Administration Studies, Arizona State University, 19 years with the BLM
Gregg Simmons, Planning and Environmental Coordinator, overall preparation review

Glossary

Allotment – An area of land designated and managed for grazing livestock

Animal unit month (AUM) – The amount of forage necessary for sustenance of one cow or its equivalent for one month

Cooperative agreement – An authorization for a range improvement or treatment on BLM lands by an agreement whereby ownership and/or maintenance is divided between the BLM and the cooperating party, usually a rancher

CYL – Cattle year-long

Ephemeral designation – An allotment classification whereby not enough perennial forage is consistently produced to sustain a livestock operation but may briefly produce unusual volumes of annual forage to accommodate livestock grazing

Ephemeral stream – A stream which flows only during and immediately after rainfall or snowfall

Fence-no fence district – A state of Arizona designation of areas upon which fencing property from range livestock is the responsibility of the property owner (fence district) or the rancher (no-fence district)

Perennial stream – A stream or spring with year-round surface flow

Private controlled lands – Private lands within a ranch on which the forage is controlled by the rancher, either by ownership or lease, or deeded grazing rights

Private uncontrolled lands – Private lands within a ranch on which the rancher has no ownership or control of forage

Range improvement – A structure, action or practice that facilitates management of the range or livestock grazing on it, increases forage production or improves watershed and range condition

Section 4 range improvement permit – A permit authorizing a range improvement or treatment on BLM lands whereby the permit holder (usually a rancher) has sole ownership and maintenance responsibility of the range improvement

Supplemental feed – A feed which supplements forage and is provided to improve livestock nutrition or rangeland management

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Mohave County

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State of Arizona

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1993 Kingman Community Profile. Arizona Department of Commerce

1997 Special Unemployment Report for January through May 1997. Arizona Department of Economic Security

1998 Hualapai Mountains Land Exchange: Effects on Ranching and Provision of Public Services in Mohave County. University of Arizona

Addressees who were sent copies of the statement

Elected officials

Office of the Governor, State of Arizona
Office of the Mayor, City of Kingman
Office of Congressman Bob Stump
Office of Representative John Verkamp
Office of Senator John McCain
Office of Senator Jon Kyl

Agencies

Arizona Department of Environmental Quality
Arizona Department of Game and Fish, Region III
Arizona Department of Transportation
Arizona Department of Water Resources
Arizona Geological Survey
Arizona State Clearinghouse
Arizona State Land Department
Arizona State Mine Inspector's Office
Arizona State Parks
Arizona State University, Center for Environmental Studies
Attorney General's Office, Land and Natural Resources
Bureau of Indian Affairs
Bureau of Land Management, Director
Bureau of Mines
Bureau of Reclamation
Bureau of Reclamation, Yuma District Office
City of Kingman
City of Kingman, Planning and Zoning
Office of Deputy A/S, Department of the Air Force
Department of Energy, Western Area Power Administration
Federal Highway Administration
Kingman Area Chamber of Commerce
Minerals Management Service, Environmental Policy and Program Division
Mohave County Manager
Mohave County Extension Office
Mohave County Parks Department
Mohave County Planning and Zoning
Mohave County Supervisors Office
Mohave County Public Land Use Committee
Mohave County Public Works Department
National Park Service
Natural Resources Conservation Services
Office of Civil Engineering
Office of National Environmental Policy Act Oversight
Pine Lake Fire Department
Pinyon Pine Fire Department
State Historic Preservation Office
U.S. Army Corps of Engineers, Los Angeles District
U.S. Department of Interior, Natural Resources Library
U.S. Department of Interior, Office of Public Affairs
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service, Division of Environmental Contaminants
U.S. Geological Survey, Environmental Affairs Program

Organizations

ARCO Pipeline Company
Arizona Antelope Foundation
Arizona Cattle Growers Association
Arizona Cattleman's Association
Arizona Native Plant Society
Arizona Nature Conservancy
Arizona Off-Highway Vehicle Association
Arizona Rifle Association
Arizona Small Mine Operators Association
Arizona Wildlife Federation
Ben Brooks and Associates
Bluebird Investment Corporation
Bullhead 4-Wheelers Incorporated
Byner Cattle Company
Cerbat Mounted Search and Rescue
Citizens Utilities
Colorado River Indian Tribes
Desert Bighorn Council
Desert Botanical Garden, Research Library
Desert Riders
Desert Tortoise Council
El Paso Natural Gas Company
Ford Motor Company, Arizona Proving Grounds
Forest Guardians
Fort Mojave Tribal Council
Friends of Arizona Rivers
Government Relations, Western Land Grant
Grand Canyon Trust

Havasu 4-Wheelers
Headquarters West, Limited
Hualapai Tribal Council
Hualapai 4-Wheelers
Institute for Policy Research
International Society for the Protection of Mustangs and Burros
Kingman Public Library
Kingman Trailriders
Mohave Community College
Mohave County Livestock Association
Mohave County Trails Association
Mohave Daily Miner
Mohave Prospectors Club
Mohave Sportsman Club
National Parks and Conservation Association
Outback Off-Road Adventures
Owens School
Prescott Audubon Society
Santa Fe Railroad Company
Sierra Club
Southwest Center for Biological Diversity
Southwestern Minerals
Exploration Association
Sverdrup Environmental Consultants
The Nature Conservancy
The Wildlife Society, Arizona State University Chapter
Walapai 4-Wheelers, Incorporated
Wasson Peak, Limited
Western Land Exchange Project
WHOA
Wilderness Society, Arizona Chapter
Windmill Ranch
X-One Ranch

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Ken Baker
Richard Basinger
Stu Bengson
Jerry Bensing
Lee Bruno, Esquire
Hap Burnett
Jim Butcher
Mary Butterwick
John Carr
Jerre J. Cavalliere
Jim Chamie
Glendon E. Collins
Bryan Corbin
Clint Cofer
Jeff Dean
Barry S. DeVenney
William Dillard
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Bruce Ellis
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Anita M. Waite
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Craig Weeks
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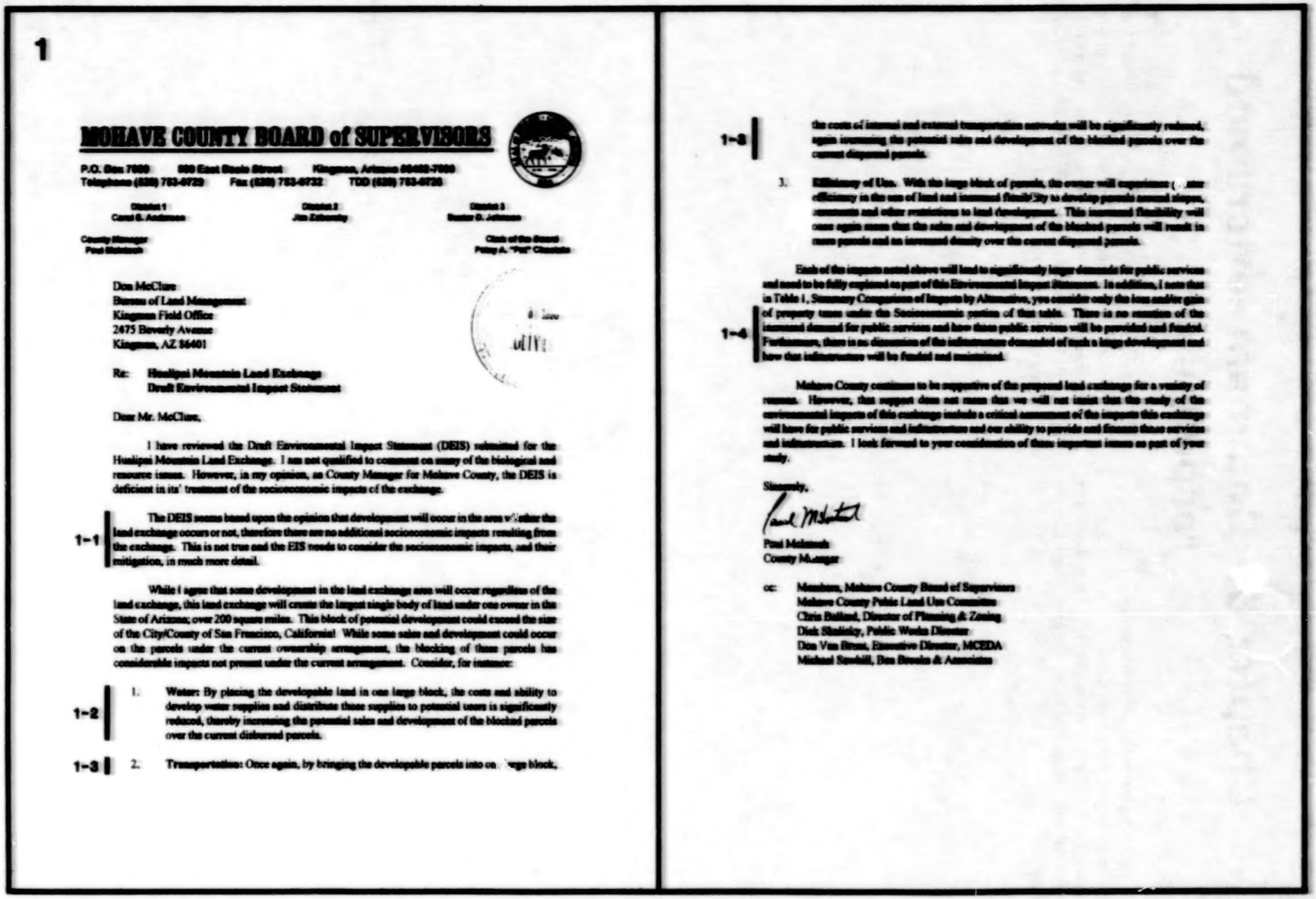
Reba Wells-Grandrud
Clyde Wescott
Jack Wilson
L.P. Yandell

Chapter 6: Comment letters and responses

This chapter presents reproductions of the 21 public comment letters received on the draft EIS during the 90-day comment period. Each letter was reviewed and comments were assigned identification numbers.

The following pages provide the 21 comment letters with their identification numbers. Following the letters are the BLM's responses to the comments. The BLM wishes to thank everyone who provided a comment letter on the draft EIS.



1

MOHAVE COUNTY BOARD of SUPERVISORS

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County Manager Paul McIntosh   Clerk of the Board Patsy A. "Pat" Chastain

Don McClure
Bureau of Land Management
Kingman Field Office
2475 Beverly Avenue
Kingman, AZ 86401

Re: Hualapai Mountain Land Exchange
Draft Environmental Impact Statement

Dear Mr. McClure,

I have reviewed the Draft Environmental Impact Statement (DEIS) submitted for the Hualapai Mountain Land Exchange. I am not qualified to comment on many of the biological and resource issues. However, in my opinion, as County Manager for Mohave County, the DEIS is deficient in its' treatment of the socioeconomic impacts of the exchange.

1-1 The DEIS seems based upon the opinion that development will occur in the area whether the land exchange occurs or not, therefore there are no additional socioeconomic impacts resulting from the exchange. This is not true and the EIS needs to consider the socioeconomic impacts, and their mitigation, in much more detail.

While I agree that some development in the land exchange area will occur regardless of the land exchange, this land exchange will create the largest single body of land under one owner in the State of Arizona; over 200 square miles. This block of potential development could exceed the size of the City/County of San Francisco, California! While some sales and development could occur on the parcels under the current ownership arrangement, the blocking of these parcels has considerable impacts not present under the current arrangement. Consider, for instance:

1-2 1. **Water:** By placing the developable land in one large block, the costs and ability to develop water supplies and distribute those supplies to potential users is significantly reduced, thereby increasing the potential sales and development of the blocked parcels over the current disbursed parcels.

1-3 2. **Transportation:** Once again, by bringing the developable parcels into one large block, the costs of internal and external transportation networks will be significantly reduced, again increasing the potential sales and development of the blocked parcels over the current dispersed parcels.

3. **Efficiency of Use.** With the large block of parcels, the owner will experience greater efficiency in the use of land and increased flexibility to develop parcels around slopes, easements and other restrictions to land development. This increased flexibility will once again mean that the sales and development of the blocked parcels will result in more parcels and an increased density over the current dispersed parcels.

Each of the impacts noted above will lead to significantly larger demands for public services and need to be fully explored as part of this Environmental Impact Statement. In addition, I note that in Table 1, Summary Comparison of Impacts by Alternative, you consider only the loss and/or gain 1-4 of property taxes under the Socioeconomic portion of that table. There is no mention of the increased demand for public services and how these public services will be provided and funded. Furthermore, there is no discussion of the infrastructure demanded of such a large development and how that infrastructure will be funded and maintained.

Mohave County continues to be supportive of the proposed land exchange for a variety of reasons. However, that support does not mean that we will not insist that the study of the environmental impacts of this exchange include a critical assessment of the impacts this exchange will have for public services and infrastructure and our ability to provide and finance those services and infrastructure. I look forward to your consideration of these important issues as part of your study.

Sincerely,

Paul McIntosh

Paul McIntosh
County Manager

cc: Members, Mohave County Board of Supervisors
Mohave County Public Land Use Committee
Chris Ballard, Director of Planning & Zoning
Dick Skalicky, Public Works Director
Don Van Brunt, Executive Director, MCEDA
Michael Sawhill, Ben Brooks & Associates

2

Rachel Thomas
Box 4637
Huachuca City, Arizona 85616

May 8, 1998

Team Leader
Hualapai Mountain Project
Bureau of Land Management, Kingman Field Office
2475 Beverly Ave.
Kingman, Arizona, 86401-3629.

Reference: Notice of Availability of Draft Hualapai Mountain Land Exchange, Environmental Impact Statement/Plan Amendment.

Request I be provided a copy of the referenced documents and placed on the mailing list for all notices and any additional documents pertaining to this action.

Sincerely

Rachel Thomas

Rachel Thomas

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3

MOHAVE COUNTY PUBLIC LAND USE COMMITTEE
P.O. Box [illegible] ◆ Kingman, Arizona [illegible]
[illegible] E. Highway 66 ◆ [illegible] ◆ FAX [illegible] ◆ TDD [illegible]
Michael Kondelis, Chairman   James Butcher, Vice Chairman

May 14, 1998

15 1998
RECEIVED

Mr. Don McClure
Project Manager, Hualapai Mountain Exchange
Bureau of Land Management
2475 Beverly Avenue
Kingman, AZ 86401

RE: Hualapai Mountain Land Exchange

Dear Mr. McClure:

This letter is an assemblage of the questions, comments and concerns of the Public Land Use Committee.

Don Martin, Chairman, Wilderness, Wildlife and Endangered Species Subcommittee - The values of Dutch Flat to wildlife and sportsmen interests are minimal. The area is inhabited primarily by small game animals such as Mourning dove, Gambel's quail and rabbits, though some mule deer and predators such as coyotes, gray fox and bobcats are also in the area. Some birds of prey are also known to inhabit the area.

The top of the Hualapai Mountains are a different story. The mountains have much more to offer wildlife and these lands being managed in a block by the Bureau of Land Management is better than the alternative, in which private lands are interspersed with public lands, making land management much more difficult.

Big game animals including desert mule deer, elk, mountain lion and, occasionally, a black bear inhabit this area. Birds of prey, including hawks, owls and, occasionally, an eagle also inhabit the top of the Hualapai Mountains. Small game animals, including quail, rabbits and predators, also are found in the proposed trade areas.

When evaluating the potential benefits to wildlife and consumptive and nonconsumptive users, it is easy to see that the trade benefits all these interests.

Managing wildlife in solid blocks of public land is not an easy task for wildlife managers. And when these areas are divided up with private landowners being interspersed throughout the area, being able to accommodate all of the interest is almost impossible. Usually ,it is the wildlife that ends up being displaced or destroyed. Case in point is Pine Lake, where private lands in the middle of a major Ponderosa Pine

SUBCOMMITTEE CHAIRPERSONS:
Bob Grumbles *Timber*
Anita Waite *Grazing*
Jim Butcher *Business & Industry*
Air Quality & Hazardous Materials
Mike Kondelis *Mining*
Bryan Corbin *Recreation*
Phil Brittmeister *Transportation*
Tim Booth *Water*
Don Martin *Wilderness, Wildlife & Endangered Species*

---

ecosystem has caused many human/wildlife conflicts. Those conflicts resulted in the major predators in the area, mountain lions and a bear, being hunted down and destroyed by the Arizona Game & Fish Department and/or Wildlife Services.

A reduction of conflicts between wildlife and private landowners would be achieved if the trade were completed and projects by agencies to stabilize or increase the numbers of wild animals could also be implemented.

3-1 Bryan Corbin, Chairman, Recreation Subcommittee - My first concern is public land access with the blocking up of private land.

3-2 My second concern is that the Green Activist Groups will file a lawsuit against the Bureau of Land Management to expand the Wabayuma Wilderness to include most or all of the blocked public land. In conversation the Bureau of Land Management says this will never happen, but it is doubtful.

Third, I feel that the ranchers that are being affected in a negative manner.

The major positive that I find is that the development is going to happen with or without the trade. Checkerboard development may be worse than the trade. I would rather have the Bureau of Land Management managing the high Hualapais than Ben Brooks. Blocked up BLM country with good access has to be better for the casual user, i.e., hunters, four-wheelers, etc.

3-3 Mike Kondelis, PLUC Chairman, Chairman of Mining Subcommittee - The evaluation of impacts to mineral resources must include the impacts to resources in the surrounding areas, not just in the lands involved in the exchange. When the lands in the exchange become populated, the homeowners typically won't want a mining operation anywhere within sight of their property. In this respect, the impacts of the land exchange are farther reaching than the exchange boundaries.

3-4 Tim Booth, Chairman, Water Subcommittee - The EIS should address the issue of water recharge capacity as compared to projected usage, including the consideration that even though the original sales will be 40 acres, investors often split those parcels into smaller parcels for resale.

The trade should take into consideration the current and projected goals of MCEDA in developing the I-40 industrial corridor. These industrial developments could/would tap into the same water source and impact the water supply.

SUBCOMMITTEE CHAIRPERSONS:
Bob Grumbles *Timber*
Anita Waite *Grazing*
Jim Butcher *Business & Industry*
Air Quality & Hazardous Materials
Mike Kondelis *Mining*
Bryan Corbin *Recreation*
Phil Brittmeister *Transportation*
Tim Booth *Water*
Don Martin *Wilderness, Wildlife & Endangered Species*

Phil Strittmatter, Chairman Transportation Subcommittee - As the Public Land Use Committee Transportation chair, the exchange does not seem to affect my committee in any way, at least for the present. If the exchange goes forward, there may be some impacts in the future when and if people begin to take up residence. And I see those impacts as being possibly burdensome to the county coffers in terms of the need for improved/extended infrastructure. Water would also seem to be an area of major concern if development proceeds.

I am concerned about the negative impact to the cattle ranching community. The loss of agricultural use of land for any type of crop, animal or vegetable, is a real concern of mine.

3-5 Truman Puchbauer, Vice Chairman, for Rob Grumbles, Chairman Timber Committee - There has been a concern about the cost to the county for each of the transactions which Mohave County processes. This is always expressed as a negative. Mohave County has a low tax base. The analysis needs to evaluate the increased value of residential property and the increased revenue to the county. Will this increased value offset the increased cost?

3-6 Private property has no legal mandate to protect Areas of Critical Environmental Concern. They should structure the exchange to retain all or as much of the ACEC as possible.

3-7 Will the exchange improve BLM fire protection both in the grasslands portion as well as the mid-elevation and high elevation areas?

Will the exchange be a positive influence or a detriment to the proposed fire management policy and the proposed prescribed burns to enhance vegetation, grazing and wildlife management?

Does the BLM have a responsibility to maintain the rural atmosphere of Mohave County? How will the proposed land exchange affect this characteristic?

3-8 Will the proposed land exchange affect the aquifer recharge characteristics and amounts? If so, by how much and in what direction? Will the exchange increase water infiltration or reduce it?

3-9 Will the proposed land exchange improve access to public lands or will access be more difficult?

3-10 Will opportunities for off-highway ORV recreation improve or decrease with the proposed land exchange?

3-11 Will the land exchange improve or diminish fire protection, sheriff or police protection to all 300,000 acres affected in the land exchange?

Assumption: The private 640-acre pieces will be developed. Will the consolidation of Dutch Flat and other areas into a major block of private residential area be an improvement in the amenities and characteristics of the Dutch Flat area?

3-12 What will be the impact on big game management by the Arizona Game & Fish Department? Will the exchange facilitate and improve big game management and hunter enjoyment? Lowland game birds have the same issue.

3-13 Will BLM scale down the proposed land exchange if undesirable effects are found? Does it have the legal authority to do so? What would trigger such a downsizing of the exchange?

3-14 If the proposed land exchange would eliminate or make uneconomical some ranch or ranching operation, can or will the BLM alter the proposed land exchange to delay the impact or eliminate or add to that portion from the proposed exchange?

Jim Butcher, Chairman Business and Industry Subcommittee - My main objections, as stated in our February 1998 meeting with Don McClure, the appraisers and the representative of Ben Brooks & Associates have not been answered or changed.

3-15 In my opinion, the exchange is not equitable for Mohave County. The appraisal was biased at its conception and, even though the work was exceptionally done, its outcome was biased. The long term cost for the County in its present form is prohibitive.

3-16 The EIS does not answer the questions concerning the ranchers or the long term cost to Mohave County. The BLM has taken the attitude in the EIS that it is not their problem.

Elno Roundy, Member Grazing Subcommittee - This is a symposis of my thoughts on the exchange. What I hope BLM will do is lay out a map of Mohave County and outline the current areas of concentrated subdivision where people are now moving into, namely Bullhead City/Mohave Valley, Golden Valley, Kingman (including the area immediately to the north), Dolan Springs and Meadview. After outlining these areas on the map it is easy to visualize that these areas alone have a potential population of millions of people. We need to look 100 years down the road and realize that there is a common bond that will be a concern to all citizens, city and urban dwellers alike. That common bond is water. We all need it and in this area our water comes from groundwater supplies. So understanding this and again looking at a map, it becomes very important that people expansion may need to be limited to the areas on the map that are currently being encumbered with people and the remainder of the area be managed primarily for watershed. Our continued living in this part of the world will depend on it, in my opinion.

So now the Federal government is proposing the second largest land transaction in the history of Mohave County, the first being the lands grants to the railroad. I have not made up my mind whether the exchange is good or bad from a watershed perspective, but I think the objective of the BLM's compiling the Environmental Impact Statement is to make this determination. What I would like the BLM to do is carefully analyze the watershed issue in the EIS.

From my own experience, I know there is a beneficial relationship between large animals on the ground and healthy, productive watershed. I use as an example a small study the BLM conducted several years ago using Holistic Management in Golden Valley. Runoff was measured in an area of no livestock use versus an area where cattle were on the land. The results were amazing. Where the livestock were excluded, three to four times as much water ran off the land compared to the use area where the cattel hooves broke up the surface cap on the soil. Even in our low precipitation on the Mojave, it does not take a rocket scientist to calculate the beneficial effects proper watershed management could have to our groundwater supplies if we have the potential to put three times as much water back into the ground than we are doing now. I admit this study was not long enough in duration to prove anything from a statistical standpoint, but it certainly merits consideration when we are looking long term to provide water for our rapidly expanding population. In my opinion, the public will be paying livestock operators 100 years from now to perform the service of creating healthy watersheds. And with that thought in mind, we need to leave enough open rangeland to accomplish this goal. Checkerboard or solid block? Which provides the best watershed protection for this particular part of Mohave County? The EIS should carefully analyze this issue.

The remainder to this memo is just thoughts for discussion and I want to emphasize this is only from a watershed management perspective. I have tried to put blinders on, so to speak. The exchange involves 11 grazing allotments: Chicken Springs; LaCienega; Hibernia Peak; Crossman Peak; Big Sandy; Diamond Joe; Happy Jack Wash; Borianna; Hackberry; Walapai Ranch; and Cedar Canyon. Watershed management needs
3-17 to be discussed on an allotment basis because of the relationship of good livestock management to good watershed condition. It is assumed the livestock are managed with the proper time control regarding grazing versus rest periods which will result in maximum vegetative production. The first three allotments on the list cover the majoirty of the trade and, therefore, this is where my comments concentrate. The remainder, although no less important from a watershed management standpoint, have little land involved in the trade and, therefore, are not discussed. Discussion looks long term, 100 years-plus.

Chicken Springs Allotment: This is a large ranch of approximately six and one-half townships. The eastern one-fourth of the ranch is mountainous and the remaining portion extends west out from the base of the mountain to the valley bottom. The proposed exchange will block up the majority of the ranch as solid public, except for an area approximately equivalent to one township in the northwest part along Alamo Road, which would become solid private. This part is more logically discussed in conjunction with the

proposed solid block of private to the north on the LaCienega allotment. Therefore, it can be said that the majority of this ranch will become public land which will be managed for multiple use. This would be positive for watershed management.

LaCienega Allotment: This is another large ranch of approximately seven and one-half townships. The entire allotment presently has a checkerboard land pattern. The northeastern one-third is mountainous and the remaining portion extends west out from the base of the mountain to the valley bottom. The proposed exchange will block the mountain and one southern township in the valley bottom as solid public. The remainder would be solid private. We can assume that the blocked public area would be positive for watershed management, and that the blocked private would not. Remember, we are throwing in the northwest portion of the Chicken Springs Allotment for analysis regarding the private block. So the question is, does the ability to manage the mountainous area for watershed outweigh the loss of management of the bajadas and the valley bottom? If we left the mountain checkerboarded and it was subdivided, the density of people living in the mountain would probably be much less than the density on the bajadas and the valley bottom. The rough country will physically limit development to a certain extent. Also, because of the broken nature of the mountain terrain with many large and small rocks interspersed with the grass and brush, water has more opportunity to infiltrate and there is less soil susceptible to capping and running water off. On the other hand, the area out from the base of the mountain has less large rocks and more soil which is susceptible to capping and running water off. So from a watershed management viewpoint, it may be better to concentrate efforts out away from the mountain. From this perspective, the solid blocked private would be a negative impact to watershed because you are removing all management possibilities due to the eventual high density of people. Assuming a high density of people in a checkerboard area out away from the mountain, would there be a positive benefit to watershed management if the alternate sections were to remain public? I think you could safely say yes, from the standpoint that half a loaf may be better than none.

The proposed exchange would provide for good watershed management in the mountain and eliminate watershed management capabilities on the bajadas and the valley bottom. Leaving the land checkerboarded is not the best of situations for watershed management, but even so may well be better than blocking.

Hibernia Peak Allotment: This is a medium sized ranch of a little over three townships. A little else than half of the ranch is in the mountain, with the remainder east of the base of the mountain on the bajadas, stretching to the Big Sandy River. The proposed exchange would block the mountain solid public. The eastern area is checkerboard private and state land, with the private being subject to subdivision. Watershed discussion for this area is similar to LaCienega.

In conclusion, this whole issue could be debated forever, but the purpose of the Environmental Impact Statement is to analyze impacts with good science. The issue is not an easy one to get a handle on. I suggest that the BLM identify watershed as a primary concern and carefully analyze this issue by obtaining the best

Don McClure, BLM
May 14, 1998
Page 7

expertise available. Professionals in hydrogeology, watershed management, range management, soils management and urban development should be consulted if the BLM does not have the required expertise.

Sample Calculation of Watershed Recharge Capabilities Comparing Exchange vs. Status Quo: This is for illustrative purposes only and is not intended to be scientific in nature, only food for thought. The author feels it merits consideration by qualified experts in their field who would then analyze impacts based on known scientific principles. The author has observed the one experiment which seems to give credibility to the analysis in a very broad sense.

The area analyzed is that portion of the LaCienega Allotment that drains into Buck Mountain Wash and Sacramento Wash. This excludes the southern township which drains south into the Bill Williams River. For ease of calculation, let's assume the mountainous portion has an average of 10 inches of precipitation per year and the bahada and valley bottoms 8 inches.

Assumptions -

1. Large animal impact of breaking the soil crust with hoof action, combined with proper rest periods for vegetative growth will result in three times as much water percolating into the soil.

2. Impact by hoof action is more effective on the bahadas and valley bottom due to the larger amount of soil available for capping. The mountainous area has much more rock, brush and grass to break up raindrops and allow percolation. Therefore, I am assuming the mountainous area will remain the same, large animal or not.

3. Current percolation for the mountainous region is 75% of annual, or 7.5 inches. Current percolation for the bahadas and valley is 60%, or 4.8 inches. These are both a SWAG.

4. Percolation for the bahada and valley bottom will probably remain close to the 4.8 inches with the current partial rest being applied or even for total rest from large animal impact.

Approximate Acreages -

Bahadas and Valley Bottoms	
currently public	36,480
state	7,040
currently RR	39,040
Total Acres	82,560

Don McClure, BLM
May 14, 1998
Page 8

Mountain	
currently public	23,680
currently RR	23,680
Total Acres	47,360

Current Percolation per Year -

Mountain	9,670,320,000 gallons, or 29,600 acre feet (47,360 acres x 204,188 gallons [.625 ac. ft. or 7-1/2"])
Bahadas/Valley	10,788,940,800 gallons or 33,024 acre feet (82,560 acres x 130,680 gallons [.4 ac. ft. or 4.8"])

Potential Percolation per Year with Large Animal Impact Applied with Time Control (assumes railroad land is subdivided) -

Mountain	Probably remain approximately the same due to the difficulty of obtaining substantial impact plus terrain, rock, and current vegetation already promote percolation to a certain degree of their own merit.
Bahadas/Valley	17,061,580,800 gallons or 52,224,072 acre feet (130,680 gallons x 3 = 392,040 gallons x [36,480 ac. + 7040 ac.])

This is just an extremely simplified illustration, but you can see there is almost a 7-billion gallon difference in percolation, as calculated, just by keeping the public and state land on the bahadas and valley bottoms available for watershed management. This is the type of information that I feel should be analyzed in the Environmental Impact Statement. --Rise Roundy

3-18 Anita Waite, Chairperson Grazing Subcommittee - What can the BLM do to guarantee continued access and multiple use of the high country once it is blocked solid public land with the lower portion controlled by many private parties?

3-19 The exchange, as currently proposed, will economically devastate several ranches. Can these lands be exchanged in such a way to minimize the effects?

How can this exchange be done to cause the least expense to the county?

3-20 Are MCEDA's goals for the industrial park being looked at? Once we have development, we need a place to bring in industry providing jobs for people.

How can the proper studies be achieved with the rigid deadlines imposed? All parties should benefit, including the community.

Don McClure, BLM
May 14, 1998
Page 9

We have been trying to get a management plan and EIS finalized since June 1996. All parties have been in agreement since the beginning. This involves only a grazing issue. In comparison, the exchange is extremely complicated, involving many issues and unanswered questions with far-reaching effects. How can a proposal of this magnitude be held to the rigid deadlines being set forth?

Many important issues are not being given proper study. We as a community are being told which lands will be traded for which lands, when, with study, the land patterns may be done more efficiently and effectively for everyone. The lands that are exchanged should be based on the needs of the community, the resources and the people who are using the land, as well as the developer...not just the interest of the developer.

Sincerely,

Anita Waite
Anita Waite, Chairwoman
Grazing Subcommittee

AW:al

cc: Board of Supervisors
John Christensen, BLM

SUBCOMMITTEE CHAIRPERSONS:

[illegible]
Anita Waite, Grazing
Jim [illegible], Business & Industry
Air Quality & Hazardous Materials
Mike [illegible], Mining
Bryan [illegible], Recreation
Phil [illegible], Transportation
Tim [illegible], Water
[illegible], Wilderness, [illegible] & Endangered Species

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"Manag...g and conserving natural, cultural, a... recreational resources"

Arizona State Parks

Jane Dee Hull
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602-542-4180

Director's Office Fax
602-542-4188

May 21, 1998

John R. Christensen, Manager
BLM Kingman Field Office
2475 Beverly Avenue
Kingman, Arizona 86401

RE: Kingman Vicinity; Results of Class II Survey for Proposed Hualapai Mountain (formerly Santa Fe) Land Exchange; BLM

Dear Mr. Christensen,

Thank you for providing this office with a copy of the Environmental Assessment (EA) for the above-referenced undertaking. In past correspondence, in response to my request that information regarding your consultation with concerned Native American tribes be made a part of the Section 106 review record, you indicated that such documentation would be included in the EA.

I have reviewed the EA and find that the only reference to your consultation is a paragraph on page 57. In our opinion, that paragraph does not constitute sufficient documentation of the consultation required by the regulations at 36 CFR Part 800. Based on information provided in meetings with this office, I believe that appropriate consultation has taken place; however, these efforts and their results should be a part of project documentation. 4-1

We appreciate your continued cooperation with this office in considering the impacts of Federal undertakings on historic preservation. Please call me at (602) 542-7137 or 542-4009 if you have questions or concerns.

Sincerely,

Carol Heathington
Compliance Specialist
State Historic Preservation Office

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United States Department of the Interior
Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
(602) 640-2720 Fax (602) 640-2730

In Reply Refer To:

AESO/SE
980853

June 9, 1998

JUN 11 1998
RECEIVED

MEMORANDUM

TO: Field Office Manager, Kingman Field Office, Bureau of Land Management, Kingman, Arizona

FROM: Acting Field Supervisor

SUBJECT: Hualapai Mountains Land Exchange

The Fish and Wildlife Service has reviewed the information provided by the Bureau of Land Management on the subject land exchange in Mohave County, Arizona, and has the following comments for your consideration.

The Service understands the analysis and assumptions used by the Bureau to come to findings of may affect, beneficial effect for the endangered Hualapai Mexican vole (*Microtus mexicanus hualpaiensis*) and Mexican spotted owl (*Strix occidentalis lucida*) for the proposed action. Protection of listed species and their habitats on private lands is a greater challenge than is faced on federal lands. Transfer of private lands containing actual or potential habitat for endangered species into federal ownership does provide a benefit to the species. However, it is important to consider that under federal management, adverse effects to the species and its habitat may occur so long as there is no jeopardy or adverse modification of critical habitat. Integration of the acquired lands into multiple use, including livestock grazing, will result in other than beneficial effects occurring. The Service recognizes that the Bureau will consider those effects when incorporating the newly acquired lands into existing management plans and will consult as appropriate.

The Service concurs with the findings of may effect, beneficial effect for the vole and the owl based on several points. First, that no suitable habitat for either species is being traded out of federal ownership; second, suitable or potentially suitable habitats are being traded into federal ownership and these lands provide for consistency of management direction currently lacking; and, three, that the requested concurrence is on the exchange of lands and the amendment to the Bureau's existing resource management plan and not on the integration of the new lands into multiple use.

The Bureau also asked for concurrence on a finding of may affect, not likely to adversely affect for the peregrine falcon (*Falco peregrinus anatum*). There are no known nesting territories in the project area, however migrating falcons may pass through the area. Land with foraging

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potential is being transferred out of federal ownership and other lands with similar or greater potential are being acquired. Additionally, the creation of contiguous blocks of federal land in the upper elevations of the Hualapai Mountains may improve foraging habitats through consistent management practices. Development on the plains below the mountains would increase and could disrupt falcon foraging or migrations. Effects from either of these factors would be very small and not likely to be significant. Based on these factors, the Service concurs with the finding of may affect, not likely to adversely affect the peregrine falcon.

Thank you for the opportunity to review these findings. If there are any questions, please contact Lesley Fitzpatrick or Ted Cordery.

Thomas A. Gatz
Acting Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ES)

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6

MOHAVE COUNTY FLOOD CONTROL DISTRICT

[illegible] E. Highway [illegible], Suite C
P.O. Box [illegible] Kingman, Arizona [illegible]
TELEPHONE [illegible] FAX [illegible] TDD [illegible]

June 23, 1998

Don McClure
USDI Bureau of Land Management
Kingman Field Office
2475 Beverly Avenue
Kingman, Arizona 86401

RE: Hualapai Mountain Land Exchange

Dear Don:

Please recall the discussion Charlie Meyer and myself had with you and Paul yesterday regarding the subject land exchange.

6-1 We gave you a marked copy of a map showing the sections under the subject exchange now highlighted by us to indicate the land sections where considerable areas are in a Special Flood Hazard Area (SFHA) as defined by the Federal Emergency Management Agency (FEMA). It is not that these areas cannot be used for development, but before any development occurs Floodplain Use Permits are mandated by the Federal, State and County Governments. Subsequent compliance documents need to be produced to us as otherwise the development will remain in violation of the NFIP and the County Floodplain Ordinance.

The intent of the NFIP (National Flood Insurance Program) is to protect people and property against the flood and other related hazards. The best way of course is to keep the floodplains in their natural form. The subject land exchange gives us a good chance to effect the intent of NFIP.

We showed you and provided you with copies of some FEMA map panels that show the floodplains under discussion here.

Please evaluate the concerns that we have and do what is appropriate and reasonable under the applicable laws and regulations governing the proposed action.

Sincerely,

K K Budhecha

Krish Budhecha, P.E.
District Engineer

[illegible]

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MOHAVE COUNTY PUBLIC LAND USE COMMITTEE

P.O. Box 7000 ◆ Kingman, Arizona 86402-7000
3675 E. Highway 66 ◆ (520) 757-0900 ◆ FAX 757-0977 ◆ TDD (520)753-0726
Michael Kondelis, Chairman James Butcher, Vice Chairman

July 6, 1998

RECEIVED
JUL 8 1998

Mr. Don McClure
Project Manager, Hualapai Mountain Exchange
Bureau of Land Management
2475 Beverly Avenue
Kingman, AZ 86401

RE: Hualapai Mountain Land Exchange EIS

Dear Mr. McClure:

Listed on the following pages is a compilation of specific comments on the Hualapai Mountain Land Exchange. These comments are from various subcommittees of the Mohave County Public Land Use Committee.

Following the specific comments are some other considerations from the subcommittees. A copy of our earlier comment letter is attached for reference.

Thank you for the opportunity to comment on this EIS. Obviously, this is an important exchange for Mohave County which will have long-term impacts. Please fully consider our questions and comments in your evaluation.

Sincerely,

Mike Kondelis

Mike Kondelis, Chairman
Mohave County Public Land Use Committee

MK:sd

Attach.

Summary Page - 7-1 Fourth paragraph: "What would change are the issues to be resolved in the future." Are we not supposed to be looking at what action is taken today and how it will affect the future?

Page 1 - Last column: This is not just an EIS but a redo of the RMP.

Page 10 - 7-2 Surface water does not address sediment load; if there is more run-off there is more sediment.
Ground water quantity depletion needs to be addressed.
Surface water rights: check ownership.
Flood plains are not being considered; Dutch Flat is a flood plain.

7-3 County tax base: if federal lands will increase, why would PILT funds decrease; and if property is kept in grazing, why would the county tax increase?

Page 11 - 7-4 (Up to Page 47.) Vole is named wrong; if there is 330 acres of critical habitat, why

7-5 is approximately 1980 acres on Hibernia A and approximately 3300 acres on Lacoinca being removed from allotments because of voles?

7-6 Land ownership: what about Hibernia B?

7-7 Species: no action; because of the way the lands lay, the effects on wildlife movement will be the same either way.

Page 12 - 7-8 ACEC: All three listed under no action; "goals will not be realized if this doesn't go through." Does this address the opinion of the experts?

Page 13 - 7-9 Cultural resources: Prehistoric due to development pressure will effect the same either way. What about the historic land use of grazing?

Page 14 - 7-10 Soil erosion potential: How can this be equal?

Pages 25, 46 - 7-11 Since Dutch Flat is the only location in Arizona where the White-margined penstemon occurs, BLM should retain those parts of the plant's range that the agency manages, and BLM should obtain the privately owned parcels. The purpose for BLM blocking the range should be to ensure that private landowners are not restricted due to the plant.

Page 29 - 7-12 Critical elements which are not issues: air quality, water quality and quantity, flood plains, wilderness prime/unique farmlands. These need to be addressed according to NEPA law.

Page 38 - 7-13 Does not address the impact on Hibernia A and B.

Page 39 - 7-14 We do not agree with the BLM's position regarding water and water shed issues. BLM's position is: "There will be no impact to the quantity and quality of groundwater." We request that BLM readdress water quality and quantity with respect to the projected population growth that may occur on these lands if developed. We strongly advise that this evaluation take place in the EIS rather than after the exchange. If the evaluation is completed after the exchange by the developer and water quantity was not sufficient, home owners may be negatively impacted and the land may not be utilized as intended in the exchange.

Pages 39, 40 - 7-15 The EIS notes that development of Dutch Flat may deplete water resources and lower the groundwater table. BLM seems to consider the impact of concentrated development in Dutch Flat as having the same effect as scattered development in the checkerboard pattern. Since the checkerboard supports more disbursed development, the effect on groundwater should be less pronounced.

7-16 The Hualapai Mountain Exchange is occurring, in part, to support ranchette development. By encouraging development in this manner, development should occur quicker that it would with the existing landownership pattern.

Pages 40, 41 - 7-17 Yucca School District will be seriously affected by the exchange. The EIS seems to discount the potential impacts. While the exchange will bring many sections in Dutch Flat into private ownership, it will remove many sections in the Dutch Flat and Hualapai Mountain area from private ownership. The offered parcels may not be presently in the Yucca School District, but the school district would undoubtedly cover that area if ranchette development should occur.

It is very doubtful that the school district taxes received from the selected parcels will cover the costs of acquiring school sites, construction, busing, building maintenance, and classroom costs. In any case, the tax revenue can be expected to lag several years behind the need.

Page 40 - 7-18 BLM including wildlife on water registration is legally questionable, especially when waters are already registered to ranchers.

Page 42 - Second sentence - The EIS states that "Private lands may eventually be removed from agricultural use and likely rezoned to rural residential." Mohave County's General Plan designates Dutch Flat as Rural Development Area. It is unlikely that the majority of the area will be rezoned from Agricultural to Residential for some time.

Page 47 - 7-19 Recreation Opportunities/Access - The EIS notes that 137 miles of road cross the selected lands. Those road miles would be lost to public use. Unless an overwhelming reason exists, all of these road miles should be accommodated in the trade, or alternates provided. Should any of these road miles provide the only access to private parcels, accommodation for these roads or acceptable alternatives is a must.

Page 48 - 7-20 Realty - Under the Rights-of-way discussion, the EIS states that 26 of the 35 rights-of-way that cross the selected lands will be transferred with the land to be administered by the private landowners. What effect will the transfer in administration have on access? Do these rights-of-way disappear at the end of their terms? Should any of the rights-of-way serve any public purpose, provide access to public lands that cannot be readily accessed via another route or provide access to private land, they should be dedicated to Mohave County, or alternatively, held by BLM.

Pages 48, 53 - Utility Corridors - According to utility corridors on page 48, 14.5 miles of utility corridors would be transferred to private ownership and the utility companies would have to acquire the property or reroute the right-of-way. The transferring of utility right-of-way into private ownership without the utility's consent is unacceptable.

7-21 The BLM intends to retain certain lands to mitigate the effect of corridor management. Will all of the utility corridors be retained by BLM? Is BLM transferring any utility corridors that contain existing infrastructure? Is BLM providing alternative routes to all of the corridors being transferred?

Pages 48, 49 - 7-22 Dutch Flat area - The EIS notes that a World War II military operations site would be conveyed to private ownership. Does this site potentially contain any unspent ordinance?

Page 53 - 7-23 Realty rights-of-way - According to this section, the BLM would grant alternative access for McCracken Mine Road should the County abandon a 6.5-mile section as requested by Brooks and Associates. However, the alternative access is classified as Category I desert tortoise habitat and requires compensation. Since any abandonment would be at the request of Brooks and Associates and would facilitate the land exchange, any compensation should either be provided by Brooks or waived by BLM.

Page 53 - Relationship between short-term uses and long-term productivity - This section notes that the 160-acre and 40-acre parcels in private ownership will eventually have roads, utilities, houses, etc. While the sales of the parcels will occur in short order, the extension of roads and utilities is several years, perhaps decades, away.

Pages 52, 53 - 7-24 Mitigation - There is no mention in this section about mitigation of socioeconomic issues. Such an omission is irresponsible. While it is true that the exchange is basically trading private property in one location for private property in another, the exchange changes the concentration, location and timing of development. Indeed the exchange will encourage ranchette development to occur at a faster rate that might otherwise happen.

Page 57 - 7-25 No religious concerns realized by tribes; charts on page 13 indicate differently.

Other Comments

7-26 Pages 40 and 41 note that Yucca's school and fire department will be impacted. School facilities will be needed to accommodate the expected population and more than one fire station will be needed. Not mentioned in the EIS is the need for additional law enforcement services. While these issues are very important to Mohave County and to Yucca, there are no mitigation measures proposed. The exchange lands should include lands to be granted to Mohave County for the purpose of providing public services. These lands should be strategically located to ensure adequate distribution.

7-27 The EIS also fails to address sustainability of the community. This land exchange facilitates a minimum build-out population of 18,860. Communities of this size need commercial/ industrial areas to ensure that shopping, services and employment exist to sustain the community.

Options to Consider

1. Should the exchange proceed as proposed and the land pattern in the Dutch Flag area becomes solely private ownership, then a minimum of ten sections scattered throughout the area should be retained in Federal ownership to provide open space and other needs such as schools, fire departments, or other community needs. This would be far-sighted and would avoid the problem the city of Phoenix is having at the present time regarding open space.

7-28 This would meet the BLM's obligation under the Recreation and Public Purposes Act to provide land for this purpose and their obligation under Section 102(a)(8) of the Federal Land Policy and Management Act that requires the public land to be managed to preserve and protect certain lands in their natural condition and provide for outdoor recreation and human occupancy and use.

The lands to be reserved should be those recommended by Mohave County Planning and Zoning plus those determined by the BLM to be lands that meet future needs for this area. We suggest the number one priority for retaining in Federal ownership would be Section 16, Township 16 North, Range 16 West, where we understand the BLM has found cultural values and on which grows a large number of giant Saguaros. Also to be strongly considered are Sections 22, 34 and 36, Township 16 North, Range 17 West. These sections contain small hills which would be preferred sites for hiking trails for local residents when the area becomes densely populated.

SUBCOMMITTEE CHAIRPERSONS:

[illegible] Timber
[illegible] Grazing
[illegible] Business & Industry
Air Quality & Hazardous Materials
[illegible] Mining
[illegible] Recreation
[illegible] Transportation
[illegible] Water
[illegible] Wilderness, Wildlife & Endangered Species

2. Regarding the devastating impact on our local ranchers, the Water Subcommittee strongly recommends that BLM seek alternative means of insuring rancher survival including the possibility of the land being acquired by a private foundation or conservatory who would cooperate with the multi-use possibilities of these private lands. The advantages of this proposal are many:

> "Wildlife may be adversely affected..." (Page 11), if the exchange takes place. By exchanging the private land with a conservatory, wildlife would benefit tremendously, especially the desert tortoise.
>
> Recreation activities would be positively impacted. Also, sportsmen would appreciate the increase in game and areas open to hunting.
>
> Water and watershed would be insured for ranching and wildlife. Flooding and drainage would occur naturally and not involve high cost methods to control. Many of the existing wells in private ownership would be required for low use needs, i.e., cattle and wildlife, rather than higher use consumption that is characteristic of private development.
>
> A negative consequence to allowing a conservatory to be involved in the trade for this land is that the tax revenue would not increase as with the original land exchange proposal.

In conclusion, we agree that the land to be traded would be a benefit overall to Mohave County if a conservatory was involved with the purchase of these lands. According to the Mohave County Public Land Use and Natural Resource Inventory Draft that was completed by the University of Arizona in May, 1998:

> "Mohave County's character is illustrated through the open rangeland unique in our country. This valuable resource is an inherent part of Mohave County and should remain an integral part of social and economic fabric."
>
> Concerning wildlife resources, the study states "Mohave County must assess their wildlife resources and manage them in a long-term fashion". (Page 104, University of Arizona Draft, May 1998). We believe that insuring future wildlife resources would be better served by not developing the lands to be exchanged.
>
> For recreation resources, "The result of urban development may cause negative impacts upon recreation resources. With growth increasing near the desirable locations, negative externalities may impact the region in a way that would harm its character." (P. 123, University of Arizona Draft, May 1998).
>
> BLM and the Mohave County Public Land Use Committee have a unique and wonderful opportunity to help facilitate wildlife, recreation, ranching and water quality and quantity by insuring that the traded lands be entrusted to parties who would favor multi-use of the land.

SUBCOMMITTEE CHAIRPERSONS:

[illegible] Timber
[illegible] Grazing
[illegible] Business & Industry
Air Quality & Hazardous Materials
[illegible] Mining
[illegible] Recreation
[illegible] Transportation
[illegible] Water
[illegible] Wilderness, Wildlife & Endangered Species

8

ARIZONA DEPARTMENT OF COMMERCE

STATE CLEARINGHOUSE

Jane Dee Hull
GOVERNOR

[illegible]
DIRECTOR

[illegible]

JUL 14 1998
RECEIVED

MEMORANDUM

TO : U.S.DEPT OF THE INTERIOR
DRAFT HUALAPAI MOUNTAINS LAND EXCHANGE ENVIRONMENTAL
IMPACT STATEMENT/PLAN AMENDMENT 15.999
AZ980424800010

FROM : Arizona State Clearinghouse

DATE : May 22, 1998

This sign-off letter is in response to the above project submitted to the Arizona State Clearinghouse for review, and may be filed with the original completed proposal. Please reference the State Application Identifier (SAI) Number in any further correspondence related to this project.

The appropriate review time has elapsed pursuant to the Executive Order 12372 and certain Arizona State officials and/or Regional Councils of Government have reviewed and supported this project as written. All written comments submitted by the reviewers will be enclosed with this letter, should comments of concern be written, you will be immediately informed and permitted to reply. Federal agencies have been notified of this signoff- letter; however, their review may remain in progress.

If you are a state agency and are granted federal moneys send a copy of the federal award letter with the State Application(SAI) Number assigned to that application. If you are to administer these funds (subgrants) through an application process, you are obligated to submit a notice or sample of the application to the Clearinghouse prior to the application period, and advise your applicants of Clearinghouse requirements. Thank you.

Joni Saad,
Manager Arizona State Clearinghouse

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9

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Kingman Field Office
[illegible]
Kingman, AZ [illegible]
[illegible]

July 15, 1999

Mr. Don McClure, Planning/Environmental Specialist
USDI-Bureau of Land Management
Kingman Field Office
2475 Beverly Avenue
Kingman, AZ 86401

Dear Mr. McClure:

I would like to take the opportunity to comment on the Draft EIS on the proposed Hualapai Mountain land exchange. The following are my comments/concerns:

Biological Resources:

9-1 1. Throughout the document, you refer to the "Hualapai Mountain vole". The actual name for the vole, as recognized by the U.S. Fish and Wildlife Service, is "Hualapai Mexican vole".

9-2 2. Of all species listed throughout draft, only two are currently listed as threatened or endangered. These species are the Hualapai Mexican vole and Mexican spotted owl. By referring to "recovery goals for endangered species..." (page 11, no action half of chart on "species"), it inadvertently gives the public the impression that the other four species are threatened or endangered. These other species include mule deer, Gambel's quail, desert tortoise (Sonoran population) and white-margined penstemon. I feel the document should clearly state in the summary chart (page 11) and throughout each section that discusses "Biological resources" that only the Hualapai Mexican vole and Mexican spotted owl are actually listed as threatened or endangered.

9-3 3. Pages 25-26, under the "Elk, goshawk" discussion, it states that "impacts to these two species from the alternatives will be similar to those described and analyzed for the Hualapai [Mexican] vole and the Mexican spotted owl. Conservation of habitat for the Hualapai Mexican vole and the Mexican spotted owl will therefore conserve habitat for elk and goshawk." With respect to elk, I am compelled to disagree with this statement. It has been extensively researched that elk diets overlap those of cattle by roughly 89%. This means that grasses are the most preferred forage species for elk. Your office asserts that the most significant habitat requirement for the vole is plenty of grass. And the grass needs to attain a height that will allow it to lie down so the vole can create its runways under the grass cover. Knowing that elk prefer grasses, and that it is unreasonable to construct an elk-proof fence around the identified 320 acres of potential habitat, it stands to reason that elk would most-probably negatively impact the vole habitat, not "conserve" it as stated.

9-4 Page 26, still under the "Elk, goshawk" discussion, it states "impacts to these two species from the alternatives will be ....." I stress the word "alternatives", because this document only truly evaluated one alternative. That alternative is to proceed with the exchange. The "no action" alternative is not truly an alternative. I would encourage you to consider at least one other viable alternative. During the public meetings prior to this draft, I believe the ranching community vocalized several other alternatives for your evaluation.

9-5 4. Page 26, under "White-margined penstemon", please provide a scientific name for this species. Also, where it states "...only grows on two certain soil types...", these are actually ecological sites – Sandy Loam Upland and Sandy Bottom. Also, the reference to "gravelly sand loams" is a reference to soil texture, not soil type. The sentence, "These two soil types alternate across this area" should be reworded to say, "These two ecological sites alternate across this area."

9-6 5. Page 41, under "Land ownership impacts", it states "In some instances, nearly all known habitat in the project area for an endangered species could be acquired by resolving the checkerboard land pattern. In addition, the BLM, USFWS and AGFD would have the ability to focus on long-term goals and objectives for conservation and recovery of endangered species." It is important to note that this same document previously identified two endangered species in the exchange area, with potential habitat in the exchange area amounting to only 320 acres. These 320 acres comprise 0.47% of the total land area in the proposed exchange. The above statement makes it sound like numerous endangered species will be affected adversely without this exchange. That is just not true. I do not dispute the fact that the law requires these two species to be protected. I take issue with the use of prose in the document to over-emphasize a very small effect to the habitat and endangered species that this exchange will have. Perhaps the statement should not have emphasized endangered species, but all wildlife in general. "Resolving the checkerboard land pattern" when only 320 acres of potential habitat exist for endangered species within the whole exchange area is simply not necessary. These 320 acres are already BLM lands and not checkerboarded. I know what the intent of this statement is, but I think you need to be fair and honest to the public and state the problem as it really is.

Water Resources:

9-7 1. Page 2, bottom of first column under "Relationship with other regulations, statutes and plans", it is stated that the authorized BLM officer "...shall give full consideration to...protecting...watersheds...." However, the draft failed to identify what watershed(s) are included in the exchange and any existing problems/concerns with water quality or quantity within those watersheds. I recommend identifying the watershed(s) using the hydrologic codes and names that the Arizona Department of Environmental Quality uses. As you know, their 1998 Watershed Assessment report will alert you to any known quality concerns (such as sediment yield) that should be addressed in the final EIS.

9-8 With regard to water quantity within the watersheds, there is much local and state generated data showing quantity deficits given Mohave County's projected growth rate. For statewide data, contact the Arizona Department of Water Resources. I feel this data should be considered on all lands in the exchange.

9-9 2. Page 33, under discussion of "Proposed action", it should be noted that water quantity will be affected due to decreased infiltration and altered watershed functions within the "urban/developable lands" discussion. I believe Stan Reedy has written your office extensive comments on this issue, plus guidance on where to locate quantifiable data that backs up the assertion.

9-10 3. Page 20, under discussion of "Proposed action", the draft states in the "unidentified/public lands" discussion that "No impact to groundwater quality is anticipated." I believe this is a negligent statement. Consideration must be given to the plain fact that these lands have the potential to be subdivided into very small parcels, each with septic tanks and leach fields. The soils throughout that Dutch Flat area are generally high in permeability, which means the potential for waste leaching into the groundwater is high. Please study this effect in greater detail.

9-11 4. Page 20, under "Proposed action", "Offered/private lands" section, it states "The BLM would acquire approximately 10.7 miles of riparian area in Bull, Hibernia and Sweetbar [illegible] Creek and Pilgrim Wash, potential perennial stream segments [illegible] in the five riparian areas and approximately 40 springs." I question [illegible] potential perennial stream segments". Just what does that mean, a[illegible] general geologic time-frame does BLM suppose these presently [illegible] segments will become perennial? I would be quite surprised and dismayed if you choose to retain that verbiage in the final EIS, but if you do choose to [illegible] it, please explain under what conditions, time frame and circumstances you expect them to become perennial.

9-12 5. Page 20, same location as in #4 above, it states "There will be no impact to the quantity and quality of groundwater." If we assume that BLM wishes to acquire these stream segments in order to facilitate the establishment of obligate-riparian vegetation species, then the groundwater quantity will be impacted. It will be impacted by greater water use and evapotranspiration rates. I realize these can't be quantified, but it should be addressed.

Areas of Critical Environmental Concern:

9-13 1. Page 12, within "no action" part of chart, it is stated under each that "the ACEC management goals and objectives would not be realized" if the no action alternative is selected. My general concern about this is why were apparently unrealistic management goals and objectives for these areas set in the first place?! The repetition of your statement in the draft causes me to wonder about the quality of this document and your methods of analysis. If realistic goals and objectives were not set for these three ACECs, why would the public believe the BLM could establish realistic ones for this land exchange? You may wish to reword these statements, or explain what each of the goals/objectives were and why they would not be realized with a no action alternative.

Recreation Opportunities:

9-14 1. Page 12, within summary chart on "dispersed recreation", it states "consolidated public land ownership in the Hualapai [illegible] would create greater opportunities for future recreation development". Perhaps I am not understanding your point, but dispersed recreation is specifically not developed recreation. Recreation is either developed or left alone (dispersed). So what is the goal here? Are you saying BLM would have the chance to develop recreation opportunities, or that BLM will choose to manage these areas as dispersed (not developed)?

Cultural Resources:

9-15 1. Page 13, within summary chart on "problems", and throughout document, it states "mountains and foothill areas sacred to the Hualapai tribe would be acquired" with the no action alternative (don't you mean proposed action alternative?). However, page 67 contradicts that statement. In the Ethnic consultations with affected Native American tribes, including the Hualapais, it states "no traditional cultural properties were identified and no religious concerns were brought up." (underline mine)

9-16 2. Page 89, "Cultural resources in Dutch Flat area", says that with regard to BLM acquisition of sacred mountain and foothill conditions, "the Hualapai tribe has stated that the Hualapai Mountains and foothill areas are sacred and they believe acquisition of additional lands in these areas would have a beneficial effect." Again, I bring up the comment on page 67 (see above #1) where they did not identify religious concerns. Well, it appears that at some point, they certainly did address concerns. Did the Tribal Council actually state that acquisition would be beneficial, or did the Council express that they had no religious concerns? In tribal relations I have taken part in, the Council has always been the final authority. If anyone other than the Council decided either position, it would be a good idea for BLM to address this conflicting issue directly with the Council, if you have not already done so.

9-17 3. Page 23, "Cultural Resources" section, last paragraph, historic Native American uses and Anglo uses are described. Specifically, "historic Anglo use of the valley [Hualapai] was mainly for transportation (roads) and ranching." Given this fact, if the proposed action negatively impacts the historic use of ranching, would BLM need to mitigate for this loss?

Mitigation:

9-18 1. Page 92, under "Ranching" mitigation, would you please further explain both suggestions, and under what conditions either mitigation measure would be undertaken?

If you have any questions, or would like me to further clarify my position on any of the concerns, please contact me at (520) 753-6163 x. 134 or at (520) 729-6804 x. 1560.

Sincerely,

Loretta J. Metz
Rangeland Management Specialist

cc: John R. Christensen, Field Manager, USDI-BLM Kingman Field Office
Anita Waite, Chair, Grazing Subcommittee, Mohave County Public Land Use Committee
Dave Hatterly, President, Mohave County Livestock Association
Rob Grumbles, Extension Agent, Mohave County Cooperative Extension Service
Hobby Brewer, Chairman, Big Sandy Natural Resource Conservation District
Tom Staley, District Conservationist, USDA-NRCS, Kingman Field Office
Steve Barker, State Rangeland Management Specialist, USDA-NRCS, Phoenix, AZ

10

USDA

United States
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Agriculture

Natural
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Service

3003 N. Central Ave.
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85012-2945

July 17, 1998

4
JUL 20 1998
RECEIVED

John R. Christensen
Bureau of Land Management
2475 Beverly Avenue
Kingman, Arizona 86401

Dear Mr. Christensen:

Thank you for the *Draft* Hualapai Mountains Land Exchange and Environmental Impact Statement/Plan Amendment (*DEIS*).

I was aware after attending meetings in the Kingman area that some ranchers were concerned that the effects of the land swap on the ranching community would not be fully and completely addressed. The BLM responded with several special meetings and engaged researchers at the University of Arizona to complete the part of the study dealing with socioeconomic effects of the Plan.

After reviewing the plan I believe that the *DEIS* has addressed the concerns of the local ranching community in a thorough and fair manner. Although not all ranchers will be positively impacted the document does a fair and complete job of presenting the effects of the land swap for the decision makers. I will leave it to other professionals to comment on the resource related issues in the *DEIS*.

Thank you for the opportunity to respond to this *DEIS*.

Sincerely,

Ron Hammer

Ron Hammer
State Economist

The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

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11

RANGELAND CONSULTING SERVICE
P.O. BOX [illegible]
KINGMAN, ARIZONA 86402
([illegible]) 757-[illegible]
FAX ([illegible]) 757-[illegible]

JUL 21

7-13-98

Mr. Don McClure
Bureau of Land Management
2475 Beverly Ave.
Kingman, AZ 86401

Dear Don,

11-1 This letter supplements my previous comments on the Hualapai Exchange. As you are aware I feel the BLM should analyze the impacts to watershed management from the standpoint of whether the Dutch Flat area would be best left in a checkerboard land pattern or blocked solid private. I strongly feel this analysis should be made, however, I also realize a decision to leave this area checkerboard is probably remote. Therefore as a supplement to your watershed analysis I suggest the following minimum allowance for watershed management in the Dutch Flat area.

11-2 There are six major drainage's off the west slope of the Hualapai's that cross the proposed block of solid private land. Four of the five flow into Buck Mountain Wash. These are all largely on the LaCienega grazing allotment and are, from south to north, Beecher Canyon, Tompkins Canyon, Cow Creek, Creamery Canyon, Cottonwood Canyon and Bar H. Wash. As proposed the exchange would leave the mountain portion of these drainage's solid federal ownership and the balance solid private. The two largest drainage's are Tompkins Canyon and Cow Creek which both run relatively close together through the center of the area. I propose a "green belt" of solid federal land be provided encompassing both Tompkins Canyon and Cow Creek drainage's from Buck Mountain Wash to the Hualapai's. This will provide watershed management options for the entire length of these two drainage's. The greenbelt would also provide a corridor for wildlife movement between the Mohave and Buck Mountains on the west and the Hualapai Mountains on the East. Several State sections would remain intermingled with the Federal but these could be exchanged out later should policy or state law change to allow this. The "green belt" would also provide open space and sites for hiking trails and campgrounds whenever the public need arises and includes the cultural sensitive section the BLM has already identified. To accomplish this suggestion additional federal land would need to be made available to Legend Land Company. I suggest that they be allowed to select the land at the mouths of Beecher and Creamery Canyons. This should be attractive to them and still leave four of the six drainage's and the upper reaches of Beecher and Creamery manageable for watershed purposes. (See map attached). It is important to note that the additional land to be selected should be within the LaCienega

Allotment. This is the ranch that, in any scenario, will be the most adversely affected by the subdivision and it makes sense to keep the subdivision concentrated on that allotment. To do otherwise may precipitate a protest from other ranchers who have already given support for the exchange as proposed. What I am trying to accomplish by proposing the "green belt" is to salvage some watershed management capabilities on the LaCienega which is the ranch hardest hit by the subdivision. 11-2

11-3 I also suggest a change in the proposed land pattern in T14 & 15N R17W. The exchange proposal would block T14N R17W solid federal and T15N R17W solid private. The head of Mohave Wash which drains south into the Bill Williams River lies in T14N R17W and the head of Buck Mountain Wash lies in the western portion of T15N R17W. If we reversed these two land patterns as shown on the map then the entire east slope of the Mohave Mountains and the entire bottom of Buck Mountain Wash would be in federal ownership and available for watershed management. This land pattern would also tie into the "Greenbelt". The head of Mohave Wash would be in private ownership but this is only a small portion of a very large drainage.

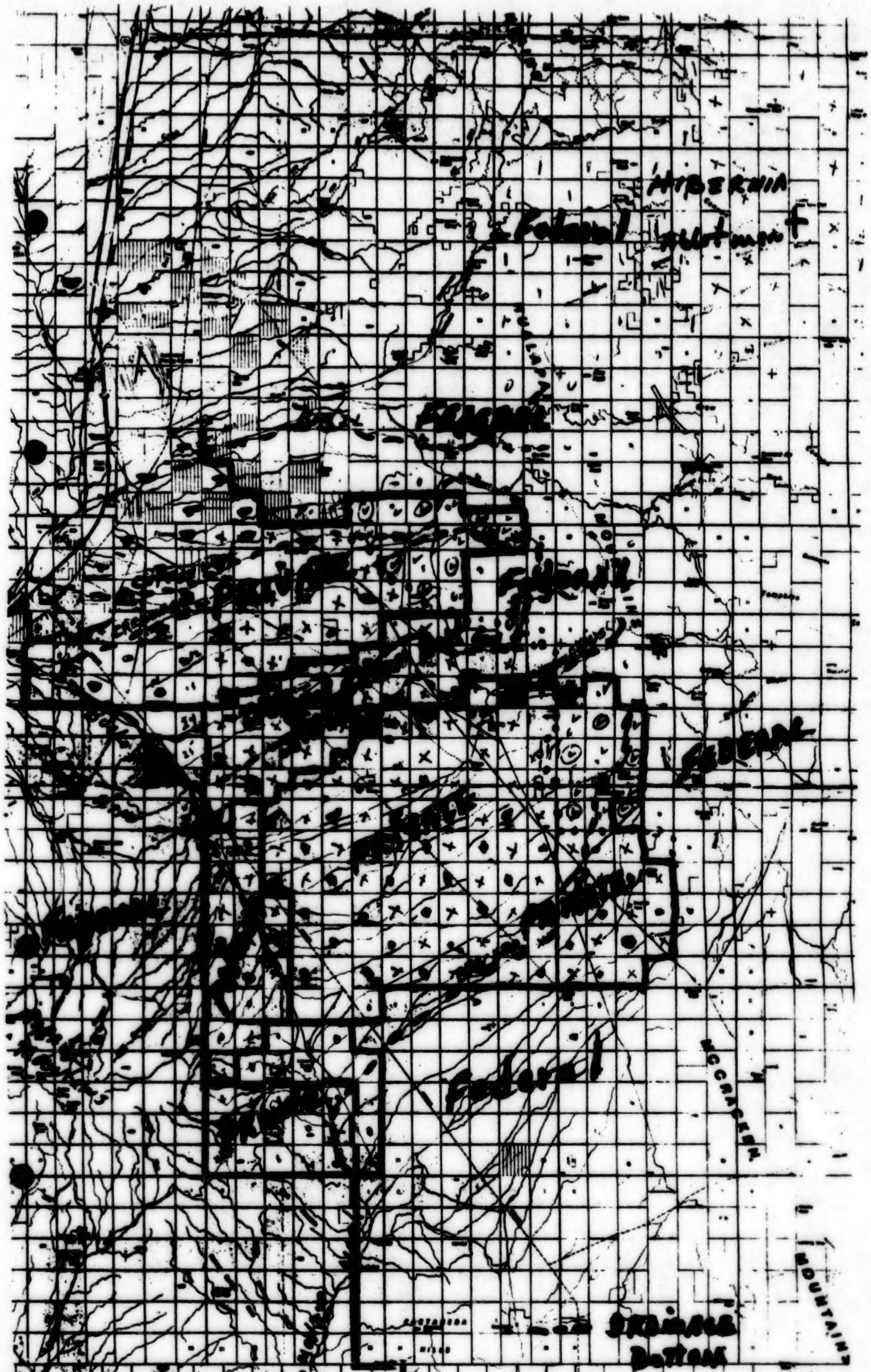
11-4 I have one final suggestion from a watershed perspective. The Hibernia Peak Grazing Allotment in the northern portion of the exchange area is proposed to be blocked solid Federal in the mountain portion of the allotment. The lower portion of this allotment is checkerboard Legend Land Company land and State. This lower portion is not part of the exchange proposal. This grazing allotment reaches from the top of the Hualapai Mountains east to the Big Sandy River and is now and has historically been managed to provide one of the best examples of rangeland in good condition in Mohave County. I suggest Legend Land be asked to offer their land in the lower portion of this allotment to the BLM. In exchange BLM would offer federal land elsewhere outside the current exchange area. Since the BLM Resource Management Plan would need to be amended to allow selection of land at the mouth of Beecher and Creamery Canyons the Hibernia portion could easily be added thus providing another ranch that would continue to be managed for watershed and other multiple uses rather than be subject to subdivision.

I hope these suggestions will be a benefit to you in deciding the best course of action for this proposed exchange.

Sincerely,

Elno Roundy

Elno Roundy



Attachment to 2-13-78 Letter

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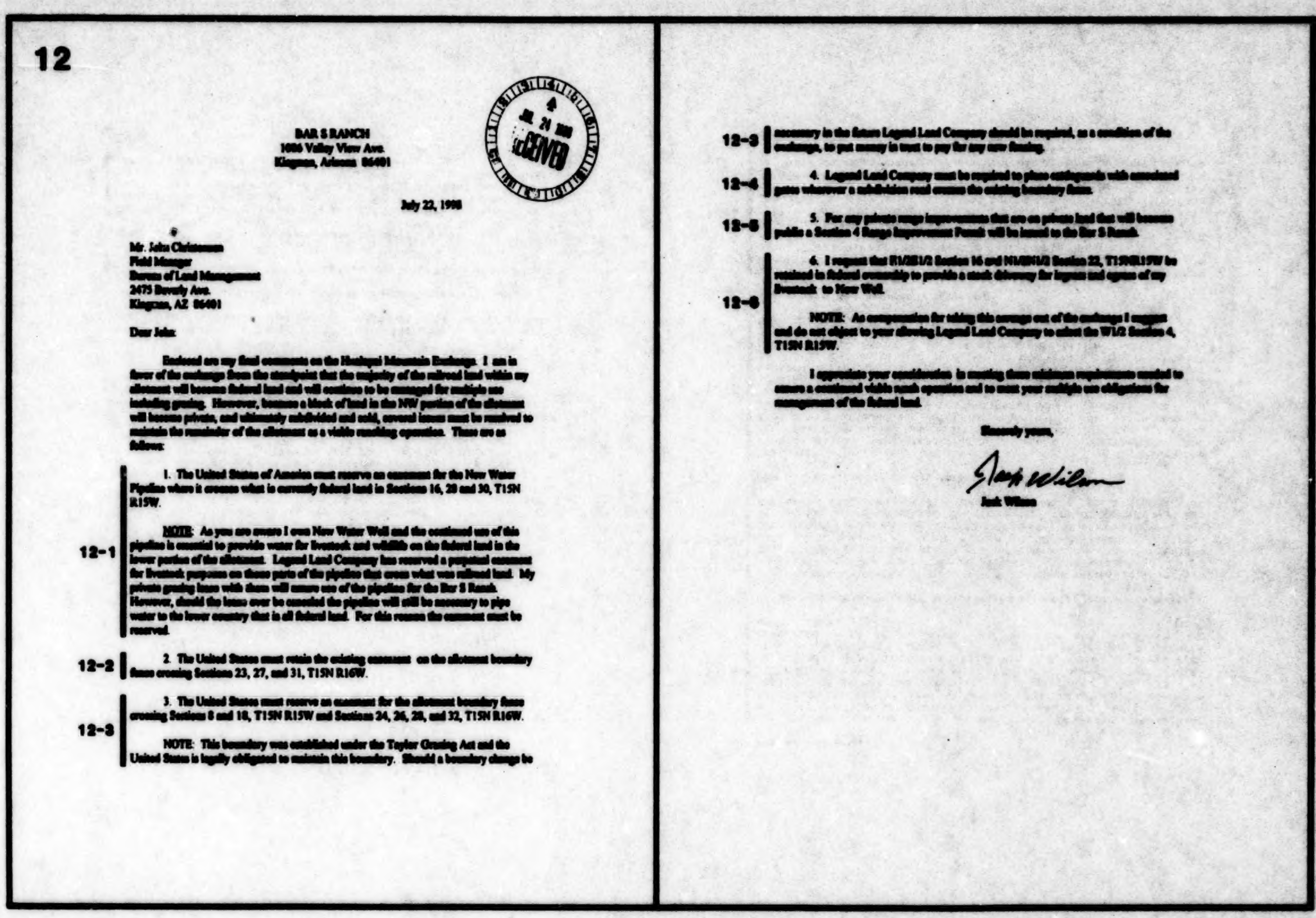

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RECEIVED
JUL 24 1998

BAR S RANCH
1086 Valley View Ave.
Kingman, Arizona 86401

July 22, 1998

Mr. John Christensen
Field Manager
Bureau of Land Management
2475 Beverly Ave.
Kingman, AZ 86401

Dear John:

Enclosed are my final comments on the Hualapai Mountain Exchange. I am in favor of the exchange from the standpoint that the majority of the railroad land within my allotment will become federal land and will continue to be managed for multiple use including grazing. However, because a block of land in the NW portion of the allotment will become private, and ultimately subdivided and sold, several issues must be resolved to maintain the remainder of the allotment as a viable ranching operation. These are as follows:

12-1 1. The United States of America must reserve an easement for the New Water Pipeline where it crosses what is currently federal land in Sections 16, 20 and 30, T15N R15W.

NOTE: As you are aware I own New Water Well and the continued use of this pipeline is essential to provide water for livestock and wildlife on the federal land in the lower portion of the allotment. Legend Land Company has reserved a perpetual easement for livestock purposes on those parts of the pipeline that cross what was railroad land. My private grazing lease with them will assure use of the pipeline for the Bar S Ranch. However, should the lease ever be canceled the pipeline will still be necessary to pipe water to the lower country that is all federal land. For this reason the easement must be reserved.

12-2 2. The United States must retain the existing easement on the allotment boundary fence crossing Sections 23, 27, and 31, T15N R16W.

12-3 3. The United States must reserve an easement for the allotment boundary fence crossing Sections 8 and 18, T15N R15W and Sections 24, 26, 28, and 32, T15N R16W.

NOTE: This boundary was established under the Taylor Grazing Act and the United States is legally obligated to maintain this boundary. Should a boundary change be necessary in the future Legend Land Company should be required, as a condition of the exchange, to put money in trust to pay for any new fencing.

12-4 4. Legend Land Company must be required to place cattleguards with associated gates wherever a subdivision road crosses the existing boundary fence.

12-5 5. For any private range improvements that are on private land that will become public a Section 4 Range Improvement Permit will be issued to the Bar S Ranch.

12-6 6. I request that E1/2E1/2 Section 16 and N1/2N1/2 Section 22, T15NR15W be retained in federal ownership to provide a stock driveway for ingress and egress of my livestock to New Well.

NOTE: As compensation for taking this acreage out of the exchange I suggest and do not object to your allowing Legend Land Company to select the W1/2 Section 4, T15N R15W.

I appreciate your consideration in meeting these minimum requirements needed to ensure a continued viable ranch operation and to meet your multiple use obligations for management of the federal land.

Sincerely yours,

Jack Wilson

Jack Wilson

13

THE STATE OF ARIZONA
GAME & FISH DEPARTMENT
2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000
www.gf.state.az.us
Kingman Office, 5325 N. Stockton Hill Rd., Kingman, AZ 86401-5499

Governor
Jane Dee Hull
Commissioners:
Chairman, Herb Guenther, Tacna
Michael M. Golightly, Flagstaff
William Berlat, Tucson
M. Jean Hassell, Scottsdale
Dennis D. Manning, Alpine
Director
Duane L. Shroufe
Deputy Director
Thomas W. Spalding

July 24, 1998

JUL 27 1998
RECEIVED

Mr. Don McClure
Team Leader
Hualapai Mountain Project
Bureau of Land Management
2475 Beverly Ave.
Kingman, AZ. 86401-3629

RE: Draft Hualapai Mountain Land Exchange and Environmental Impact Statement (DEIS)/Plan Amendment

Dear Mr. McClure:

The Arizona Game and Fish Department (Department) was a cooperating agency in the development of the Bureau of Land Management's (BLM) EIS for the proposed Hualapai Mountain Land Exchange. The Department has worked closely with the Kingman Field Office to ameliorate any effects of the land exchange on wildlife resources. The positive benefits of the Land Exchange; acquisition of 40 springs and 10.7 miles of riparian habitat, restricted urbanization, and a gain in acreage of priority preferred wildlife habitat, outweigh the negative effects of transferring approximately 70,000 acres out of the public domain. Therefore, the Department supports the Proposed Action within the EIS to proceed with the Hualapai Mountain Land Exchange.

The Department has reviewed the Hualapai Mountain Land Exchange EIS and does have some comments and suggestions for improving the analysis within this document. The following comments are document specific and labelled in a manner consistent with the EIS format.

Planning issues and criteria for the proposed amendment (page 3)

13-1 The second sentence of the first paragraph is incomplete and should be revised.

Species selected for evaluation-Mexican spotted owl (page 23)

13-2 The description of riparian habitat includes big-leaf maple. The Department recommends using the common name for this species listed in Arizona Flora (Kearney and Peebles 1960), big-tooth maple (*Acer grandidentatum*), since big leaf maple is a species (*A. macrophyllum*) found in the Pacific Northwest.

Map 6. (page 24)

13-3 The vegetation communities map does not illustrate the 10,000+ acres of semi-desert grasslands, all of which will be in private ownership after the Land Exchange. The Department recommends including this habitat type on Map 6., or providing a Map note with an explanation for its exclusion. Because it appears that all the mapped semi-desert grassland acres within the Land Exchange area will be developed, perhaps a short narrative in the Biological resources section is needed to describe why this is not significant.

Water resources-Proposed action-Selected/public lands (page 39)

13-4 The EIS describes the disposition of livestock improvements within several sections (permittee compensation, conveyance of water rights, etc.), but the disposition of the Department's Sacramento Valley catchment 1 is not stated within the analysis. The Department recommends including the transfer of this catchment out of public land ownership in either the Water resources, the Hackberry allotment, or Biological resources sections of the EIS.

Species evaluation-Desert tortoise (page 44-48)

13-5 This section strives to develop a method to objectively compare the impacts of the two alternatives on various wildlife species. For the desert tortoise, the results of this methodology are listed in Appendix J on page 99, and there is only a slight difference in habitat units between the alternatives. However, the narrative in the EIS states that the No Action alternative may contribute to the listing of this species under the Endangered Species Act. The habitat units are not even mentioned in the narrative. This seems to defeat the purpose of an objective comparison. The Department recommends including a map and an analysis of the habitat units derived from Table 6. on page 45 to better demonstrate the benefits/impacts to desert tortoises from the Land Exchange.

White-margined penstemon (page 46)

13-6 The statement, "Under the No Action alternative, long-term survivability of this species is questionable," seems biased. In both alternatives, the white-margined penstemon Area of Critical Environmental Concern is still fragmented between public and private lands. Under the Proposed Action, nearly 2,211 acres of public lands will become privately owned and receive no protection. Also, the habitat units for the No Action alternative listed within the narrative are not consistent with those in Appendix J (1294 HU's to 1736 HU's). If the latter figure is correct, the objective analysis shows that the No Action alternative is more beneficial to the white-margined penstemon than the Proposed Action.

Cumulative Impacts (page 88)

13-7 The Walnut Creek Land Exchange is also near the Hualapai Exchange and needs consideration within the analysis.

The Department appreciates the opportunity to comment on this land management action. We look forward to continued cooperation and coordination on this project in the future. If you have any questions concerning this letter, please contact me or Tom Fresques at the Kingman Regional office, (520) 692-7700.

Sincerely,

Duane J. Aubuchon
Habitat Program Manager

DJA:dja

cc: Rod Lucas, Regional Supervisor, Kingman
Bob Posey, Field Supervisor, Kingman
Shawn Wagner, Wildlife Manager, Kingman South
AGFD# 6-21-98(11)

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14

Roy C. Averill-Murray

[illegible]

July 24, 199[illegible]

JUL 27 199[illegible]
RECEIVED

BLM
Kingman Field Office
[illegible] Beverly Avenue
Kingman, Arizona [illegible]

Reference: [illegible]

Dear Sirs:

[illegible]

14-1 [illegible]

14-2 [illegible]

[illegible]

Sincerely,

Roy C Averill-Murray

Roy C. Averill-Murray

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15

Robert S. Lynch
Attorney at Law

340 E. Palm Lane
Suite 140
Phoenix, Arizona 85004-4529

Office: (602) 254-5908
Fax: (602) 257-9542
Email: RSLynchAty@aol.com

JUL 30 1998

TELECOPIED AND MAILED
(Fax number: 520-692-4414)

July 27, 1998

John R. Christensen
Field Manager
Bureau of Land Management
Kingman Field Office
2475 Beverly Avenue
Kingman, Arizona 86401

Re: Draft Environmental Impact Statement/Plan Amendment for the Proposed Hualapai Mountains Land Exchange

Dear Mr. Christensen:

I have reviewed the draft EIS on this exchange and I have the following comments.

The general theme of the draft EIS is that development is coming and that this land exchange will consolidate BLM ownership in environmentally sensitive areas as a trade for blocking up private ownership for development. Given the television ads that are already appearing in the Phoenix Metropolitan area and the activity in the Sacramento Wash area that is already occurring, that conclusion is probably valid. 15-1 However, the draft EIS essentially ignores obvious long-term consequences for the environment of the Sacramento Wash area as well as the ranching community's ability to sustain itself because of this development.

15-2 There is no analysis of the increase in development that blocking up the private lands encourages. There is virtually no assessment of the impact on water availability from the growth that the land exchange will accelerate. The draft EIS acknowledges that two other exchanges are taking place in the same area. Indeed, other land exchanges are being actively considered. There is also active consideration of an electric generating station at the north end of the valley.

John R. Christensen
July 27, 1998
Page 2

15-2 Since surface water supplies for urbanization are essentially non-existent, future development will depend on increased use of groundwater supplies. Yet there is no assessment of the forces that these exchanges are setting in motion as a cumulative impact to the area. Nor is there any assessment of the cumulative impact on BLM's land management program, including areas of critical environmental concern (ACEC). The sole assessment seems to be that consolidated land ownership will improve land management. The increase in population and use of lands, with or without permission, is not assessed. Yet, the BLM exchanges will accelerate the development of the valley along the interstate highway and accelerate recreational use of adjacent lands, including those in the ACEC areas and adjacent wilderness areas.

15-3 Finally, there seems to be little assessment of any requirement on the parties acquiring BLM lands with water resources or of any restrictions or compensation or replacement requirements that would be associated with a transfer. These additional issues need to be addressed as well.

Thank you for the opportunity to comment on this proposed land exchange and draft EIS.

Sincerely,

Robert S. Lynch

RSL:psr
cc: Jerre J. Cavalliere

16

MOHAVE COUNTY PLANNING & ZONING DEPARTMENT

P.O. Box 7000 ◆ Kingman, Arizona 86402-7000
3675 E. Highway 66, Suite A ◆ (520) 757-0903 ◆ FAX 757-3577
1130 East Hancock Road ◆ Bullhead City, Arizona 86442 ◆ (520) 758-0707 ◆ FAX 763-0870

CHRISTINE BALLARD
DIRECTOR

July 23, 1998

Don McClure
Bureau of Land Management
Kingman Field Office
2475 Beverly Avenue
Kingman, AZ 86401

Dear Mr. McClure:

I have enclosed the Planning and Zoning Department's formal response to the Draft Hualapai Mountains Land Exchange and Environmental Impact Statement/Plan Amendment. If you have any comments or questions please feel free to contact me or other members of the staff.

Sincerely,

Kevin A. Davidson

Kevin A. Davidson
Planner I

Encl: Response to EIS

MOHAVE COUNTY PLANNING & ZONING DEPARTMENT

P.O. Box 7000 ◆ Kingman, Arizona 86402-7000
3675 E. Highway 66, Suite A ◆ (520) 757-0903 ◆ FAX 757-3577
1130 East Hancock Road ◆ Bullhead City, Arizona 86442 ◆ (520) 758-0707 ◆ FAX 763-0870

CHRISTINE BALLARD
DIRECTOR

Response from the Mohave County Planning and Zoning Department to the Draft Hualapai Mountains Land Exchange and Environmental Impact Statement/Plan Amendment.

Date: 7/15/98

The draft EIS has been reviewed and reflected upon by the Mohave County Planning and Zoning Department. Comments have been divided by the report's chapters and pages and are as follows:

Chapter 1:

Page 3:

16-1 Under "Issues beyond the scope of the EIS. . . ," the projected population of the selected lands (to become private) should be presented. This calculation can be based on one dwelling per 40 acres (under existing zoning), or 16 dwellings for each section of land in the exchange.

16-2 Mohave County will continue performing maintenance on Alamo Road. However, the existing level and frequency of maintenance activity should also be mentioned. When coupled with the increased number of automobile trips derived from the population projection, the county will be obligated to increase its roadway maintenance activities to preserve public safety. This expanded maintenance cost should be taken into account and introduced when increased revenues from the subdivided land sales are presented later on in the report. In other words, will the costs of maintaining some 30 miles of Alamo Road at a safe level offset any gains to the county in the form of newly realized property taxes? *(See the Department of Public Works for the costs of maintaining Alamo Road at present and the projected maintenance costs to serve this new development).*

Chapter 2:

Page 5:

16-3 "Future foreseeable actions" places the burden of road maintenance on the property owners association. This responsibility is written into the Stagecoach Trails C.C.& Rs. These accessways, built by the proponents, are native material roadways similar to the existing roads in the area maintained by the county. The county has no authority to enforce private C.C.& Rs. This places the long-term maintenance of these roads at risk. There are at least two scenarios for the future of these private roads: 1) if the roads are not maintained by the property owners association, the county may be obligated to accept some or most of them for maintenance due to

16-3 public safety reasons. However, these roads are not being built to county standards and the county will not be compelled to accept them for maintenance. 2) Conversely, if the roads are diligently maintained by the new owners in Stagecoach Trails, the costs of maintenance would most likely be defrayed by the division and subsequent sales of the property. This will increase the density of the private land, increasing the road maintenance costs to the property owners association, hence more pressure on the land owners to defray maintenance costs by further subdividing. The subdividing of the typical 40-acre parcel will most likely occur through the minor land division process. This procedure, unlike the formal subdivision process, does not require improvements on the property being divided (typically roadway construction and electric line extensions).

Page 9: 16-4 The conflict shown in the "People and Cattle" issue can probably be resolved, in respect to roadways, with range fencing and cattle gates. Who will be responsible for the construction of these improvements? How far will these improvements be extended beyond the exchange area to fully mitigate the greater impact area?

Page 10: 16-5 The issue of "Surface Water" should address the presence of the newly constructed roadways. These native material roadways will increase sediment run-off and also channel water along their course. Low spots in the road bed will also collect water, creating temporal pools of surface water.

16-6 Under "County Tax Base," please explain how the $86,000 gain in property taxes was achieved. Is this dollar amount based on the sales of all 40-acre and 160-acre parcels (yet to be surveyed) in the exchange area and without capital improvements?

Page 11: 16-7 Aside from emergency fire services and schools, the costs of extending sheriff and paramedic services should be mentioned. The increased maintenance costs of Alamo Road should be shown here as well.

Page 12: 16-8 "Dispersed Recreation" does not state that public access in the exchange area will be limited to only the existing public roadway easements and new road easements established by the proponents.

The "Roads" section should reference a map showing the 137 miles of roadways being lost after the exchange. This will augment the meager descriptions on page 47.

Page 13: 16-9 This exchange will create a large tract (150 sq. mi. in Dutch Flat) without land set aside for recreation and public purposes. The "R&PP" part of the EIS should examine which parts of the exchange, if any, could be reserved for R&PP uses.

Chapter 3:

Page 20: 16-10 The "Groundwater" sub-section references an independent groundwater study by Hargis & Associates, Inc. The water table is between 50' and 950' in the Sacramento Valley (Dutch Flat), according to the report. Please summarize the study's findings by describing in map or tabular form the location and depth of the wells. The Arizona Department of Water Resources considers a subdivision's water supply inadequate if individual wells are deeper than 400 feet. The aquifer's natural rate of recharge should also be placed in the EIS.

Page 21: 16-11 The "Socioeconomic" portion of the report should be expanded to include increased sheriff, paramedic and road maintenance costs.

Page 25: 16-12 Sections 22, 26 and 36, T16½N R17W include the ACEC for the White-margined penstemon. The three sections fall along Alamo Road and are less than 10 miles from Yucca. These two locational factors will place considerable development pressure on owners to subdivide their properties to 5 acre lots. How will this endangered plant species fare under these urban conditions? What type of human settlement, if any, is compatible with this plant species? Do you suggest that the upcoming area plan for Dutch Flat address the preservation of this plant species?

Chapter 4:

Page 29: 16-13 The EIS has discounted the exchange's impact on air quality. There are two post-exchange factors which will lead to a deterioration in air quality. Each section of land developed with 40-acre parcels will require 10 miles of bladed native material roadways (page 51). The surface disturbance for a native material roadway cross-section, when taking in to account drainage ditches, is approximately 40 feet. This equals 48.5 acres or 7.6% for each section developed. With the natural desert pavement removed, blowing dust will occur during windy conditions and when driven upon. Another factor affecting air quality will be the use of alternate power sources in lieu of a conventional electric source. Diesel generators will probably be the choice for most homebuilders given its low cost and uncomplicated technology.

Page 39: 16-14 Revisiting "Water Resources," the report is concerned with increased development lowering the water table. What would be the recommended number of homesites that the water table could sustain without being lowered? This section also addresses the impact of septic systems on water quality and renders a null finding. Do the sandy-loam and sandy-gravel soils provide the percolation rates to justify this statement?

Page 40: 16-15 Please expand the "Socioeconomic" section, discussing the issues addressed above, to include impacts on the Sheriff's Dept. and road maintenance costs.

Page 42: 10-16 Under current zoning - AR/36A - all lands in Dutch Flat and along Antares Road can be developed for residential use without rezoning.

Page 53: 10-17 Please provide a map depicting the location of the utility corridors not transferred by the BLM.

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17

MOHAVE COUNTY
ECONOMIC
DEVELOPMENT
AUTHORITY, INC

July 24, 1998

Michael P. Sawhill
Ben Brooks & Associates
4738 N. 12th Street
Phoenix, Az 85014

Don McClure
Bureau of Land Management
2475 Beverly Ave.
Kingman, Az 86401

RE: Hualapai Land Exchange

Dear Mr. Sawhill and Mr. McClure:

Gentlemen, please find attached as Exhibit A the list of land by section, township and range that Mohave County Economic Development Authority is in need of acquiring. Exhibit A is the total list of land needed to build out I-40 industrial corridor.

17-1 Exhibit B is the list of land needed in the years 1998-1999 and 2000, in order to meet our immediate needs

If you have any questions please contact me at 520-692-6970. Thank you for your assistance.

Sincerely,

Donald W. Van Brunt
Donald W. Van Brunt
Executive Director

CC: Paul McIntosh, Mohave County Manager
Carol Anderson, Mohave County Supervisor, District 1
Jim Zaborsky, Mohave County Supervisor, District 2
Buster Johnson, Mohave County Supervisor, District 3
Dick Skalicky, Mohave County Public Works, Director
Chris Ballard, Mohave County Planning and Zoning, Director

3160 SHANGRI LA DRIVE • KINGMAN, AZ 86401
520 692-6970 • 520 692-6972 • FAX 520 692-6974
E-MAIL: mcedo@ctaz.com • www.ctaz.com-mcedo

Exhibit A
July 22, 1998

B.L.M. Land in I-40 Industrial Corridor needed for immediate expansion and development of the corridor, listed in order of importance.

S ½ of Section 6 T20N R17W

That portion of Section 8 T20N R17W owned by B.L.M.

W ½ and S E ¼ of S W ¼ and N W ¼ of N E ¼ of Section 9 T20N R17W

That portion of Section 17 T20N R17W owned by B.L.M.

That portion of Section 30 T20N R17W lying E of I-40 R/W

That portion of Section 6 T19N R17W lying E of I-40 R/W

That portion of Section 7 T19N R17W lying E of B.N.S.F. R/W

That portion of Section 18 T19N R17W lying E of I-40 R/W and E of the State of Az owned portion of Section 18

That portion of Section 19 T19N R17W lying E of B.N.S.F.

All of Section 30 T19N R17W owned by B.L.M.

That portion of Section 31 T19N R17W lying E of B.N.S.F. R/W

All of Section 4,8,18 & 20 of T17N R17W

All of Section 12, 14, 24, & 26 T18N R18W

All of Section 6, 7, 18, 20 & 32 T18N R17W

That portion of Section 1 T17N R18W lying E of I-40 and B.N.S.F. R/W owned by B.L.M.

That portion of Section 12 T17N R18W lying E of B.N.S.F.- R/W and W of town site of Yucca

That portion a sliver of Section 25 T17N R18W lying E of B.N.S.F. – R/W

All of Section 24 T17N R18W

That portion of Section 25 & 36 T17N R18W E of B.N.S.F. R/W

All of Section 20 T16.5N R18W except N1/2 of NE1/4

All of Section 30 T16.5N R18W

All of Section 32 T16.5N R18W

All of Section 28 T16.5N R18W

All of Section 2 T16N R18W

All of Section 10 T16N R18W

That portion of E ½ of Section 31 T16.5N R18W belonging to B.L.M.

Exhibit B
July 22, 1998

B.L.M. Land in I-40 Industrial Corridor needed for immediate expansion and development of the corridor, listed in order of importance.

1). That Portion of Section 30 T20N R17W lying E of I-40 R/W

1). All of Section 20 T16.5N R16W except N ½ of N E ¼ and that portion dedicated to I-40

2). That portion of Section 12 T17N R16W lying E of B.N.S.F. - R/W and W of Yucca town site

2). All of Section 6 T16N R17W

3). That portion (a sliver) of Section 23 T17N R16W lying E of B.N.S.F. - R/W

3). All of Section 24 T17N R16W

NOTE: At this time it appears the 1's will be needed in 1998. The 2's in 1999 and the 3's in the year 2000.

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18

HUALAPAI MOUNTAIN LAND EXCHANGE
PUBLIC MEETINGS COMMENT SHEET

( )Wikieup Meeting ( )Kingman Meeting ☒ Yucca Meeting

Please provide your comments on the Draft Environmental Impact Statement/Plan Amendment for the proposed Hualapai Mountain Land Exchange. Please be as specific as possible, citing the section of the EIS that you are commenting on, what needs to be changed or added and why the change or addition is necessary.

IN RE: Appendix A - Plan Conformance Determination - Disposal of lands not specifically identified in the RMP - Parcel descriptions - Page 84. Also reference Map 1 - Proposed Exchange - Hualapai Mountain Public Land Area: Based on description/location, parcel T.17N., R.17W., sec. 24 is incorrect. This parcel, as written, would be located within the Poachie ACEC Boundary. The correct designation for this described parcel should be T.17N., R.18W., sec. 24. 18-1

IN RE: Socioeconomics - Page 3. Effect of the county tax base on Yucca school & fire departments may be difficult to determine, unless fire-district & taxing district boundaries change. At present, we who reside on privately-owned land in the direct surrounding Yucca are not permitted (over please) 18-2

LAST NAME Williams FIRST NAME Georgie
ORGANIZATION and TITLE
MAILING ADDRESS P.O. Box 113
CITY Yucca STATE AZ ZIP CODE 86438-0113

Mail to BLM. Don McClure. 2475 Beverly. Kingman AZ. 86401

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to vote on Yucca issues. Our ballots apply only to Federal, State, County, & Kingman issues. Our annual tax statements reflect allocations to countywide services & Kingman school districts only.

18-2 If the proposed land exchange takes place, & the area's population increases substantially, the demand for more schools & expanded fire/emergency service will require a much larger tax base. We desert-dwellers, present & future, have a vested interest in Yucca & would like to feel that our tax monies are benefiting our community, & that we have a voice in determining how these funds are administered.

We appreciate the opportunity to provide input & are, generally, in favor of the land exchange.

Georgie C. Williams

19

Cane Springs Ranch
Anita M. Waite
P.O. Box 7
Wikieup, AZ 85360
(520) 765-2397

July 24, 1998

RECEIVED
JUL 2 1998

Mr. Don McClure
Project Manager, Hualapai Mountain Exchange
Bureau of Land Management
2475 Beverly Ave.
Kingman, AZ 86401

RE: Hualapai Mountain Land Exchange EIS

Dear Mr. McClure:

We support the comments made by the Mohave County Public Land Use Committee.

19-1 **The land exchange is going to effect 300,000 acres of land and its future use. More land pattern options need to be considered. As it stands it is this pattern or no exchange. A fairer analyses needs to be presented for the users of the land and the community.**

Time needs to be taken to address and possibly complete some other scenarios. The developer has imposed a time schedule that is not realistic for an exchange of this magnitude to be properly analyzed by all effected parties.

Sincerely;

Anita M. Waite

Anita M. Waite

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20

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

4
JUL 30 1998
RECEIVED

JUL 24 1998

John Christensen, Field Manager
BLM--Kingman Field Office
2475 Beverly Avenue
Kingman, AZ 86401

Dear Mr. Christensen:

The U.S. Environmental Protection Agency (EPA) has reviewed the Hualapai Mountains Land Exchange Draft Environmental Impact Statement (DEIS). Our comments on this DEIS are provided pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and §309 of the Clean Air Act.

The DEIS evaluates a proposal to exchange approximately 70,000 acres of "selected" public land for an equal amount of "offered" private land. The selected lands are primarily in the Dutch Flat area southeast of Yucca, AZ, and near Antares, AZ. The offered lands are in the Hualapai and McCracken mountains and foothills. The primary purpose of the exchange is to "block" land to facilitate long term management of natural resources and to promote efficient sale and development of private land. A "no action" alternative is also considered, as required by NEPA.

EPA commends the BLM for taking steps to address the checkerboard land ownership pattern within the Kingman District. Our only concern involving the proposed exchange involves the possibility that the selected lands may be subsequently divided into smaller parcels, increasing the possibility of impacts to wildlife, air quality, and water resources. We encourage BLM to work with Mohave County to ensure that appropriate zoning restrictions are placed on the selected lands to avoid significant impacts from future development. At a minimum, the FEIS should include a discussion of actions taken by BLM to ensure that environmental impacts stemming from future development in the selected lands will be minimized. One possible strategy would be to transfer the land subject to restrictive covenants limiting the ability of future landowners to subdivide their property, remove native vegetation, or use their property for purposes that run contrary to an agreed-upon local/state/federal "planning vision" for the area. **20-1**

Based on the concern discussed above, we have assigned this DEIS a rating of EC-2 (Environmental Concerns--Insufficient Information). We appreciate the opportunity to review this DEIS. If you have any questions about this letter, please call Leonidas Payne of my staff at (415) 744-1571.

Sincerely,

for David J. Farrel, Chief
Federal Activities Office

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21

X-ONE RANCH INC
PO BOX 4 - [illegible] ROAD
VALENTINE ARIZONA [illegible]

Phone & Facsimile
[illegible] Main
[illegible] Fax

JUL 31 1998
RECEIVED

USDI-Bureau of Land Management
Attention: Mr. Don McClure
Kingman Field Office
2475 Beverly Avenue
Kingman Arizona 86401

July 30, 1998

Re: Draft Hualapai Mountain Land Exchange and EIS / Plan Amendment

Dear Don:

Thank you for allowing me to submit some comments regarding the exchange. I thought that most all of our concerns and specifically also the ones regarding this Ranch have been addressed in the various meetings we attended. Therefore I though it was not necessary to repeat myself.
We support all the comments and concerns that were made by the USDA-NRCS with the letter dated July 15, 1998 by Loretta J. Metz.
As you know we are an affected party with selected public lands located in T24N, R14W.
We would like you to consider all concerns previously stated and emphasize again on the importance to be able to continue with our livestock grazing operation.
Therefore we would like for the BLM to ensure that (but not limited to):

21-1
- the integrity of our fences / fence lines can be maintained
  (We are concerned with our boundary fences, as you know we have already had problems with that fence line. All the legal and consequential implications and consequences with regards to the permit have to be considered.)
- specific easements granted by the BLM to the rancher prior to the exchange for the fences and the legal road access through the parcels to our other lands leased under our permit;

21-2
- fair compensation for all loss (actual AMU's lost through the exchange and monetary decrease in value of our permit assessed at fair market value*)

---

*Note
21-3 The exchange and the immediate development of these particular sections will encourage land development (not just sales) within our allotment and around it at a much faster pace than if the exchange would not occur. This has a direct impact on our livestock operation.

21-4 We would also like to express our interest of purchasing those selected lands ourselves provided that this exchange regarding the lands as indicated above is going to be pursued. For that purpose we would like to receive information as to the appraised value of these selected lands.

Respectfully yours,

X-One Ranch Inc.

By:
Beatrice M Nibel Zenger, President

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Responses to comment letters

General response

Thank you for your comments on the Draft Hualapai Mountains Land Exchange Environmental Impact Statement/Plan Amendment. They were very helpful in determining what further information was necessary to collect and present before a decision could be made concerning this proposed exchange.

Many of the comments received were concerned with developing private property. The Mohave County General Plan guides the development of private property in Mohave County.

Specific responses to each letter

1-1 It is expected that the Dutch Flat area will be developed regardless of the exchange. Under the no action alternative, the land exchange would not take place and a checkerboard land patterns would remain. This land pattern would continue to hamper land management as well as fire and emergency service response times.

1-2 The BLM agrees that by placing the private land in one large block, the costs and ability to develop water supplies and distribute those supplies to potential users is significantly reduced. This is in line with Policy 10.10, 39.1, 39.2, 39.6, as stated by the Mohave County General Plan of 1995. This factor is one item among many that could increase the sales and development of land in the area. Such sales and development are dependent upon factors such as availability of services, proximity to a job market, the type of land being marketed, marketing strategy of the seller and market demand.

1-3 The BLM agrees that by blocking lands for development, the costs of the transportation network will be lower than if a transportation system was to be developed with checkerboard ownership (response 1-2). Sales and development of lands are dependent on factors such as availability of services, proximity to a job market, the type of land being marketed, marketing strategy of the seller and market demand.

1-4 The selected/public lands are proposed to be sold in 40- and 160-acre parcels. A landowners' association exists; as lands are developed, they are added to the association as this is part of the declaration of covenants, conditions and restrictions affecting the development parcels. One function of the landowners' association is to maintain the roadways. Developing wells to provide water and septic systems will be the responsibility of individual owners. Law enforcement is provided by the Mohave County Sheriff's Department. Fire services could be provided by the nearest fire district, but fires on private land outside of a fire district are a Arizona State Land Department responsibility.

Public infrastructures and services should be developed and maintained according to the Mohave County General Plan, Chapter 7. The BLM is not proposing any amendments to this chapter as the BLM recognizes Mohave County Planning and Zoning as the authority on planning for private land development within Mohave County. The BLM is aware that the exchange proponent is working with representatives of Mohave County to establish a General Improvement District which should provide a basis for funding and maintaining public infrastructure.

3-1 A discussion of the impacts on access to public lands is in Chapter 4 of the EIS under the heading of Recreation opportunities/access. To alleviate some of the expected impacts, road access points are identified under Mitigation, also in Chapter 4.

3-2 The BLM currently has no plans to conduct any further review of lands for wilderness suitability.

3-3 Mining notices and mining operations are not dependent on the outcome of this exchange.

The BLM currently processes mining notices on public lands and will continue to do so regardless of the outcome of the exchange. When a large-scale mining operation (five acres of annual surface disturbance or larger) is proposed for public lands, a mining plan of operations is required and subsequent analysis (according to NEPA) is conducted using this MPO as the proposed action. It is during this process that mines and their effects on the environment, including the stated concern about visual quality, would be analyzed.

3-4 It is beyond the scope of this EIS to analyze the long-term groundwater availability and uses for Mohave County. However, it is within the scope of this EIS to analyze groundwater use on the selected/public lands, assuming residential development of those lands into 40-acre parcels; this has been included in the Final EIS in Chapter 4, Water resources. Analysis of water usage assuming later splitting of the 40-acre parcels into smaller units is beyond the scope of this EIS and not discussed.

3-5 See page 40 of the draft EIS. It is estimated that the tax base of Mohave County will initially gain an estimated $86,000 in private property taxes. Assessment of these lands was based on agricultural properties and vacant land; however, once the lands are improved, they will be assessed at a higher rate of limited and full cash property value. Once this occurs, the revenue to Mohave County will increase.

3-6 The Kingman RMP designated ACECs with the recognition that goals, objectives and management prescriptions only apply to federal lands. ACEC designations recognized that private lands intermingled with public lands also may harbor sensitive natural resources and consequently may be desirable for acquisition. The proposed action would block up the higher quality, more densely populated areas of *Penstemon albomarginatus* within the White-Margined Penstemon ACEC. The BLM has worked with the proponent to secure and consolidate the highest quality lands available for effective long-term management for this species under the proposed action. Acquiring all the private lands in this ACEC has not been presented as an alternative by the private landowner. The next best available option – consolidating the most important lands for long-term conservation of this species under federal ownership – is the one pursued under the proposed action.

3-6 The Kingman RMP only designates the public lands within the ACEC boundary as an ACEC. But one of the management prescriptions for the ACEC is to acquire private land within the ACEC boundary. Under the proposed action, 3,950 acres of offered lands would come into public ownership and 1,800 acres of selected lands would go out of public ownership into private ownership. Because there would be a net increase of 2,150 acres of public lands within the ACEC, the proposed action actually not only retains as much as of the ACEC as possible, but increases its size.

3-7 This proposed exchange will not necessarily improve BLM fire protection. It would, however, simplify matters of jurisdiction and responsibility by consolidating tracts of private and public lands. Private lands in Dutch Flat would be under the jurisdiction of local fire departments. BLM fire resources would continue to be available to assist local fire departments on private land. Public lands acquired at middle and upper elevations will appropriately fall under BLM fire jurisdiction. The BLM employs resources (helicopters, air tankers) capable of quickly attacking fires in this remote and rugged terrain.

The proposed exchange would support the proposed fire management policy for the area. Acquisition of offered/private lands within the Hualapai Fire Planning Area would simplify the planning and implementation of fuels projects in this area by reducing the number of agencies involved in such projects.

3-8 The final EIS (Chapter 4, Water resources) discusses changes to the watershed (i.e., surface runoff, sediment load, groundwater use, groundwater quality) as a result of each alternative.

3-9 Please see comment 3-1.

3-10 Impacts to existing roads in the project area are discussed in Chapter 4 of the EIS, Recreation opportunities/access. The overall conclusion of the analysis was that a greater loss of road opportunities would occur under the no action alternative.

3-11 Fire and police protection will improve with a blocked-up land pattern. The current land pattern may hamper fire district and law enforcement ability to provide timely emergency responses.

3-12 The Arizona Game and Fish Department, a cooperating agency in this land exchange, helped develop the biological report and was directly involved in analyzing and addressing the issues of access and hunting opportunities. Chapter 4, Environmental consequences states that the proposed action represents a positive management change for mule deer and that benefits for quail are similar to those described for mule deer. Deer will not only gain in acreage of preferred habitat, but these habitats will exhibit more continuity and integrity than those found under the no action alternative. Under the proposed action, open space will be conserved, allowing free movement by wildlife and habitats relatively free from harassment associated with human activities.

3-13 The EIS is being prepared to recognize the effects of the proposed action and no action alternatives. The BLM has the legal authority to change the configuration of the exchange. The record of decision will document which lands, if any, will be exchanged. The decision does not have to be an all-or-none situation. The information contained in the EIS is used by the decisionmakers to make an informed, reasonable determination of which lands are to be exchanged. It is conceivable that the land exchange could be somewhere between the proposed action and the no action alternative.

3-14 The analysis of impacts to allotments was presented in the draft EIS in Chapter 4, pages 29 to 39. In the final EIS, the analysis has been expanded to include information from the University of Arizona report which analyzes the economic impacts to the ranches having lands involved in the exchange. The report's conclusions are based on scenarios of "average" or composite ranches created to understand the general effects to the ranches involved in the exchange. This report analyzes both long- and short-term impacts to the ranches as they would be with and without the land exchange. In the short term, impacts from the exchange would be minimal to the composite ranches. Over the long term, however, the composite ranches containing only offered/private lands or only selected/ public lands would become uneconomical, regardless of whether the land exchange takes place. The composite ranch containing both offered and selected lands would maintain its viability only if the land exchange occurs. Page 52 of the draft EIS describes the mitigation of impacts to the allotments.

3-15 Appraisal Process. Regulations at 43 Code of Federal Regulations (CFR) 2201.3 address appraisals for land exchanges, including reference to the Uniform Appraisal Standards for Federal Land Acquisition (UAS) (Department of Justice 1992). These standards stem from years of eminent domain legal action and provide guidance for all federal appraisals. Additionally, state appraisal laws implementing the Uniform Standards of Professional Appraisal Practice apply to a certain extent. All appraisals for the Hualapai Mountains land exchange were completed and reviewed by professional, state-certified appraisers.

The land involved in the exchange was appraised using the sales comparison approach, the most common and defensible method to appraise land. It derives an indication of value from a methodical comparison between the land being appraised and several recent sales of similar land. Land is deemed similar if it is of the same highest-and-best use, that is, it enjoys the same probable, physical, legal, and financially productive use. A key feature of comparability is the size of the parcels used in comparison to the exchange lands. Several large sales sold over the past few years were used in the appraisal.

3-16 Please see response 3-14.

3-17 This EIS is not an analysis of the effects of cattle on watershed condition; as a result, the four-page analysis of this comment on cattle and watersheds will not be included in the final EIS. However, Chapter 4, Water resources discusses changes to the watershed (i.e., surface runoff, sediment load, groundwater use, groundwater quality) as a result of each alternative.

3-18 Two access points to the "high country" of the Hualapai Mountains were identified as facing potential closure if the exchange were to occur. These locations are discussed in Chapter 4 of the EIS under Recreation opportunities/access. The BLM proposes to guarantee continued access at these locations by working with the proponent to assure legal public access. See the discussion in Chapter 4, Mitigation.

3-19 Please see response 3-14.

3-20 MCEDA's goals have not yet been put forth in a document for review. Existing maps show various facilities, areas of acquisition, etc. The BLM is aware that a document being prepared by MCEDA will fully describe the goals of the I-40 corridor and the importance of each map. The BLM looks forward to working with MCEDA, Mohave County representatives, other agencies and special interest groups in determining the impacts to the social, economic and environmental resources from the proposed I-40 corridor.

4-1 The section on Native American consultation has been expanded for greater detail and clarification.

6-1 Please refer to the Floodplain sections in chapters 3 and 4.

7-1 The fourth paragraph contains two distinct ideas – management of the private development and management of natural resources. Therefore, the last two sentences need to be read together. "Natural resource management would be accomplished under either a consolidated or dispersed ownership pattern. What would change is the issues to be resolved." This is saying that in the checkerboard ownership pattern, the natural resource issues would be, for example, wildlife movement over a dispersed area, resolving trespass situations, working on fire suppression strategies, processing rights-of-ways for roads, utilities, etc. Consolidated development would involve such issues as wildlife habitat enhancements and studies, resolving fewer trespass situations, working on a prescribed fire program and processing fewer rights-of-ways, for example. The point is that natural resource management in the checkerboard ownership situation is based on a reaction to proposal for facilities or other uses that serve development of the private lands. Under blocked ownership, management of natural resources would be more to conserve them for people to use for long-term enjoyment of open space, wildlife, ranching, recreation and other multiple uses.

7-2 The final EIS addresses sediment load and groundwater depletion in Chapter 4, Water resources. A search of ADWR records for surface water rights and well permits was completed as part of this exchange. The majority of water rights on the offered/private lands are held by Santa Fe Pacific Railroad, under contract to sell its lands and interests therein to Ironhorse Investors, Inc., the exchange proponent. As stated in Chapter 4, Water resources, Offered/private lands section, only those rights held by the exchange proponent would be transferred to the BLM.

7-3 PILT payments would no longer be made on the selected/public lands. This figure is based on $0.16/acres (69,000 acres). However, PILT payments would be made on the offered/private lands once they were converted to public lands.

Please see comment 16-6. The increase in private property taxes is based on the potential assessment of the selected/public lands according to the Mohave County Assessor's office for the fair market value of surrounding lands that have previously been sold (parcels ranged from $50 to $267 per acre). The number of acres is multiplied by the fair market value and then multiplied by a 16-percent assessment for Class Four lands, which consist mainly of agricultural properties and vacant land. That total is then multiplied by the tax rate, based on the tax district where the parcel is located. This calculation is not based on lands having grazing status; if it was, the property tax would be substantially less.

7-4 Throughout the FEIS, the common name Hualapai mountain vole has been changed to Hualapai Mexican vole.

7-5 There has been no formal critical habitat designated by the USFWS for the Hualapai Mexican vole. The referenced 330 acres refers simply to the amount of vole habitat that would be acquired by the BLM as part of this land exchange.

Some of the areas excluded from the Hibernia Peak Unit A and La Cienega allotments were not vole habitat, but were excluded to take advantage of using natural boundaries to minimize fencing and costs. The areas excluded were accomplished in cooperation with the permittees and were relatively small; therefore, no livestock reductions were made.

7-6 The draft EIS, Chapter 3, Affected environment, page 19 describes the affected environment for Hibernia B, including the ownership. Information has been added to the final EIS regarding the acreage of the deeded and private lands on the Hibernia B allotment.

7-7 Wildlife biologists from the BLM and the Arizona Game and Fish Department have indicated that wildlife movement and conservation would be hindered under the no action alternative, which would maintain the checkerboard land ownership pattern. Table 1 in Chapter 2 is a summary comparison of impacts by alternative. Pages 41 to 46 of the EIS provide a detailed discussion of environmental consequences which more thoroughly discusses the impacts of checkerboard land ownership on wildlife.

7-8 The Kingman RMP, page 103, states: "With land exchanges and some simple measures to protect the limited habitat of the white-margined penstemon in Arizona, the BLM can ensure the continued survival of the species . . ." In addition, the management prescriptions for all three ACECs call for acquiring private land within their boundaries. Implementing the management prescriptions of the ACECs helps to achieve the goal and objectives of the ACECs. Therefore, without land exchanges such as this, e.g., utilizing the no action alternative, it is highly unlikely that the management goal and objectives of the ACECs would be realized. So the text in Table 1 has been modified to state that under the no action alternative it would be highly unlikely that the goals and objectives would be met.

7-9 The summary of impacts to cultural resources in Table 1 has been corrected. The use of land for grazing has been analyzed in the draft and final EISs under Grazing administration.

7-10 A total of 75,000 acres of offered/private lands, of which 43,600 acres have a severe erosion hazard rating, has been identified for acquisition in this proposed exchange. If these offered lands are not exchanged with the selected land, the identified 43,600 acres with severe erosion ratings will remain in private holdings and will be slated for development.

7-11 As mentioned in response 3-6, the BLM would actually acquire a net increase of 2,150 acres within the ACEC. The only way to obtain this increase in acres of public ownership, other than fee purchase of private lands within the ACEC boundary, is by a land exchange such as this. Funding is not likely to ever be available to purchase all of the private land. The blocking of land ownership would enhance the BLM's ability to manage public lands.

7-12 Scoping is a process for identifying the significant issues related to a proposed action (40 CFR 1501.7). In addition, 40 CFR 1500.1 instructs preparers to concentrate on issues of true importance rather than amassing needless detail. Scoping of this project did not bring to light the items you mentioned as issues to this project. There is no basis for analysis as comments received on the draft EIS offer no information as to how these items may be affected by the proposed land exchange.

7-13 Chapter 4, Environmental consequences addresses the impacts to the Hibernia Peak

Unit A and Unit B allotments.

7-14 The conclusion of no impact to groundwater quantity and quality refers to the offered/private lands which will come under the management of the BLM; this conclusion has been modified in the final EIS (Chapter 4, Water resources) as minimal. However, there may be impacts to groundwater quantity and quality on the selected/public lands which will be developed into 40-acre residential sites; this is discussed in the final EIS in Chapter 4, Water resources.

7-15 Please refer to response 7-14.

7-16 The proposed exchange would affect how ranchette development would occur, that is, in a blocked or checkerboard ownership pattern. Land ownership pattern may influence how quickly ranchette development occurs. Other factors such as the I-40 corridor, local job market, proximity to utility services, etc., also affect sales and development of an area. See also response 1-3.

7-17 See page 40 of the draft EIS. Eighty percent of the lands proposed for exchange are within the Yucca School District, which will benefit from the exchange; it is estimated that the school district's tax base will initially be increased by approximately $20,000. By blocking up the private land, bus service costs can be kept down.

7-18 See response 7-2. The 21 surface stockwatering rights that will be amended to include wildlife are held by Santa Fe Pacific Railroad, not the ranchers. The addition of wildlife as a beneficial use will not affect the number of livestock nor the use by livestock on these water sources.

7-19 With little exception, roads which cross the Dutch Flat and Hualapai valleys cross alternating private and public land sections. The segments of road which cross private land have no public easements and are, or will be, obliterated to make way for private land development. This would leave segments of roads which cross the selected/public sections. It is the BLM's opinion that these road segments would serve no useful public purpose; therefore, the BLM does not propose to pursue easements for these road segments as a stipulation for the exchange. Planned subdivision roads will provide abundant public access to all private parcels and across the valleys. Where public access would be lost to adjacent public lands, alternative access routes are planned. Please see response 3-1.

7-20 Of the 28 rights-of-way that would be transferred with the land and be administered by private landowners, 12 are for road access, of which eight are perpetual road rights-of-way to Mohave County. Of the remaining four, one is perpetual and the other three are for 30-year terms. If the exchange proceeds, the earliest a road could be blocked across the formerly public lands is 2021.

7-21 The four utility companies that would be affected by the exchange have been contacted. The BLM has yet to receive comments or concerns from these companies. Two of the companies have perpetual rights-of-way and the other two have a right-to-renew clause in their grants. The rights-of-way will not have to be rerouted. Retention of certain lands to mitigate the effect on corridor management is one of the alternatives being considered; the decision will be made in the record of decision when it is signed. The proposed exchange would transfer five sections of land with existing infrastructure into private ownership.

7-22 The site potentially does not contain unspent ordinance as gunnery operations were air-to-ground surface.

7-23 Any compensation would be provided by Ben Brooks and Associates or would be waived by the BLM in accordance with the Mitigation section (Realty subheading), page 53, of the draft EIS.

7-24 See response 1-1.

7-25 See response 4-1.

7-26 See response 3-11. Additional private property tax generated from the selected/public lands would go to Mohave County to provide schools and fire and law enforcement. The Kingman RMP (see page 27 of the draft EIS) has designated areas near the exchange for recreation and public purposes, strictly for use by local and state governments. The proponent has met with Mohave County to identify lands that could be used for public purposes. At the time of the draft EIS, Mohave County had not yet identified any such lands.

7-27 Your letter implies that the BLM should dictate what areas should be rezoned should the exchange go through. The BLM is not proposing rezones of private land or of land proposed to go private ownership, recognizing Mohave County Planning and Zoning as the authority on private land development for the county. It would seem most appropriate that the Mohave County General Plan and the process set up by Planning and Zoning would guide development of this area, including the request for rezones to commercial/industrial areas.

7-28 The exchange proponent, the Mohave County Manager and the BLM have met to discuss lands needed for public purposes such as schools, fire stations, sheriff's stations, etc. The exact amounts and locations of land that the developer will deed to the county for these public purposes is being determined. The BLM has designated 330 acres near Yucca, Arizona as available for R&PP (RMP 1995, Appendix 17). In addition, public lands around the large private block of land can be used for R&PP using procedures found at 43 CFR Part 2740.

In the final EIS, you will find that T. 16.N., R. 16 W., sec. 16 is being considered for retention in public ownership under the equal appraised value alternative.

9-1 Refer to response 7-4.

9-2 Text has been modified to clarify that there are only two listed species in the exchange area (Chapter 3, Biological resources).

9-3 In the document, it was stated that habitat for the Hualapai Mexican vole and the Mexican spotted owl will likewise conserve habitat for elk and goshawk. There is no mention of the reverse as stated in your letter.

9-4 Your comment states that the no action alternative is not truly an alternative, but you provide no basis for this conclusion. The no action alternative is a viable alternative and a requirement by 40 CFR 1502.14 (c). A decision maker must consider all of the alternatives discussed in an EIS (40 CFR 1505.1[e]). Public scoping meetings were held in June and July 1997 to present the proposed land exchange. It is during this scoping period that alternatives based on public input are most efficiently developed. The letters received during scoping presented no alternatives.

9-5 The scientific name for white-margined penstemon is *Penstemon albomarginatus Jones*. No scientific names were included in the draft EIS, but they are in the biological report, which is available on request. The text has been modified to use ecological sites rather than soil types (see Chapter 3, Biological resources, White-margined penstemon).

9-6 Text has been modified in Chapter 4, Biological resources, Land ownership impacts, to specify the Mexican spotted owl and the Hualapai Mexican vole as listed species within the exchange area.

9-7 The watersheds containing the proposed exchange are described in Chapter 3, Water resources and shown on Map 5. As stated in the final EIS in Chapter 3, Water resources, there are no published water quality data specific to the lands of this proposed exchange; the Arizona Department of Environmental Quality was contacted and documents published by that agency were reviewed – no such data were found. Water quality on lands outside of the exchange are considered outside of the scope of this EIS and, as a result, was not included. An analysis of projected future water deficits in Mohave County is also considered out of the scope of this EIS; this EIS is not a land use planning document for Mohave County.

9-8 See response 9-7.

9-9 See response 3-8.

9-10 Chapter 4, Water resources in the final EIS discusses the potential of groundwater contamination from septic tanks.

9-11 The word potential, as used in the phrase "potential perennial stream segments," has been removed from the final EIS in the Water resources sections of chapters 3 and 4.

9-12 The BLM believes that the statements concerning groundwater quantity and quality on the offered lands are correct. The stream segments containing riparian vegetation acquired by the BLM in this land exchange will essentially remain in the same condition as they are; there will be little change and therefore no impacts.

9-13 See response 7-8.

9-14 The Issue heading in the first column is inaccurate. The final EIS has been changed to the heading of Recreation opportunities.

9-15 The impacts to cultural resources summary (Table 1) has been corrected. See also response 4-1.

9-16 See response 9-15.

9-17 The BLM does not compensate for the loss of livestock use of BLM lands resulting from actions such as land exchanges. BLM grazing permits or leases no right, title or interest held by the U.S. in any lands or resources.

9-18 An easement could be reserved where an existing boundary fence exists on selected BLM lands. This could be done if an easement is requested by the rancher and if it is anticipated that a fence would be necessary to control livestock in an area where it is anticipated that grazing would continue over the long term. Moving a boundary fence to BLM lands would be considered if it is anticipated that, as a result of the exchange, development would preclude livestock grazing from an area in an allotment in the short term.

11-1 See response 3-8.

11-2 The alternative you propose would cause a significant change in the disposal, retention and acquisition goals of the Kingman RMP. Disposal, retention and acquisition lands were determined in the RMP after looking at all the issues, rather than only one. The proposed action in this land exchange was developed in accordance with the RMP and with respect to the business goals of the proponent. The BLM can only enter into a land exchange with a willing landowner.

11-3 See response 11-2.

11-4 The rancher operating the Hibernia Peak A and B allotments has approached the BLM and Ironhorse Investors, Inc. with a similar proposal. You will be kept informed of any progress made on the proposal.

12-1 Under the proposed action alternative, an easement would be reserved by the U.S. government where this pipeline exists in sec. 16, T. 15 N., R. 15 W. An easement would be reserved in secs. 28 and 30 if it can be secured for where the pipeline crosses the adjacent secs. 21, 29 and 31.

12-2 The agreement for this easement specifies that it is effective only if it is deemed necessary or beneficial for, or in connection with, the control, administration or use of the public lands surrounding or adjacent to the fence in secs. 23, 27 and 31, T. 15 N., R. 16 W. The proposed land exchange would eliminate from public ownership lands surrounding or adjacent to secs. 23 and 27. To maintain the portion of this easement in sec. 31, adjacent to public lands not included in the exchange, would require an additional half-mile of fence for it to be contiguous. Allotment boundaries may be adjusted by the BLM under 43 CFR 4110.2-4. See Chapter 4, Mitigation.

12-3 See Chapter 4, Mitigation.

12-4 The land developer has placed cattleguards at several locations along the boundary fence between the La Cienega and Chicken Springs ranches as required when an allotment boundary fence is cut. This requirement applies only to public lands and is authorized under right-of-way grant AZA 30290. This requirement will remain in effect even if the selected public lands are transferred to private ownership.

12-5 Section 4 range improvement permits will be issued for improvements on the offered lands as stated in Chapter 4, Environmental consequences.

12-6 Access to New Well would be provided along the easements that will be placed around each section by the land developer.

13-1 The sentence has been changed to "The planning issues and criteria considered in this amendment process are land tenure, special area designations and wildlife habitat/threatened or endangered species, fully described in the Kingman RMP."

13-2 Text has been modified to use the common name of big-tooth maple.

13-3 A reference to Map 2, which shows the area of the semi-desert grasslands, has been added to the text under Biological resources.

13-4 Comment is noted and the text has been modified in Chapter 4, Water resources, Proposed action, Selected/public lands. Based on your recommendation and subsequent consultation with your department, the wildlife catchment you described will be transferred with the public lands.

13-5 A separate biological report for this EIS was completed by an interagency team of wildlife biologists from the BLM and the AGFD. Technical biological information and methodologies are explained in that document. The EIS reflects the analysis and factual information in the biological report.

There were no significant differences in habitat units for desert tortoise under the proposed action and no action alternatives. The EIS team decided to focus the analysis and discussion on the more significant issues of land ownership patterns and manageability as reflected by the tortoise categorization process. Determination and analysis of habitat units is presented and available for review in the biological report, available upon request.

13-6 The Kingman RMP, page 103, states: "With land exchanges and some simple measures to protect the limited habitat of the white-margined penstemon in Arizona, the BLM can ensure the continued survival of the species . . ." The implication of this statement is that land exchanges are necessary to meet the goal and objectives of the ACEC and the continued survival of the species. Therefore, without land exchanges such as this one, in other words under the no action alternative, the management goal and objectives of the White-margined Penstemon Reserve ACEC may not be realized and the statement in the draft EIS regarding the impacts of the no action alternative is accurate. The Hualapai Mountains land exchange only affects 10 sections out of 57 sections within the ACEC boundary. Therefore, it could not, and does not, affect more than a small part of the ACEC and the fragmented land ownership pattern within the ACEC.

Other land exchanges, when and if they are proposed, will have to address the remaining majority of the ACEC. In the meantime, the Hualapai Mountains land exchange contributes to the blocking of 15 sections of public lands (combining current public lands with offered/private lands), a significant first step in meeting the goals and objectives of the White-margined Penstemon Reserve ACEC. The figure of 1,736 habitat units in the table on page 100 of the draft EIS is the correct one and the text on page 46 has been changed to read 1,736. Although more acres and habitat units of white-margined penstemon habitat have been found on selected/public lands than have been found on offered/private lands, three factors balance or offset this loss. First, 2,150 more acres are gained within the ACEC; second, 500 more acres of high-quality habitat are gained than lost; and third, habitat manageability is increased on blocked public lands.

13-7 Blocking up public lands via the Walnut Creek exchange would enhance wildlife movement through the Walnut Creek Wildlife Corridor.

In addition, the Walnut Creek exchange will help to ensure that development does not take place adjacent to the Warm Springs area.

14-1 Continued monitoring of the Hualapai Foothills desert tortoise plot is planned. It was last monitored in 1996. These plots are on a five-year monitoring cycle.

14-2 Another ongoing land exchange -- ASARCO/Ray -- is proposed in the McCracken Mountains in T. 14N, R. 15W. If completed, this will result in a public-owned corridor of tortoise/wildlife habitat between the McCracken and Hualapai mountains.

15-1 See response 3-14.

15-2 See responses 3-4 and 15-2. The cumulative impacts to the White-Margined Penstemon Reserve ACEC is described under Chapter 4, Environmental Concerns. This paragraph has been incorporated under the Cumulative impacts section.

15-2 As noted in the EIS, the impacts on designated ACECs were analyzed. The existing checkerboard land status is addressed, as is the fact that long-term effective management of *Penstemon albomarginatus* and its habitat would be enhanced under the proposed action. Urbanization and concurrent increases in recreational activities are analyzed in the EIS. The BLM land exchange program seeks to accommodate developing communities while preserving or enhancing management of natural resources. Development of the private lands within the project area and recreational activities on adjacent public lands is already occurring and will continue to occur, regardless of this land exchange. The exchange seeks to accommodate the orderly, planned growth and development of local communities while maintaining and/or enhancing adjacent public lands for the management of multiple uses, including natural resource management and recreation.

15-3 The BLM will compensate ranchers for their interests in water developments and other range improvements on the selected lands as per 43 CFR 4120.3-6(c), unless an easement is granted. The rancher would have the use of and access to these improvements under a grazing lease with the proponent.

16-1 Projections for the year 2005 indicate that Mohave County will have an annual growth of 3.14 percent, well above the state's rate of 2.3 percent, making it one of the fastest growing counties in the state. Using the calculation of one dwelling per 40 acres, there could potentially be 1,450 new residences in the Dutch Flat area and 240 new residences in the Antares area.

16-2 The following information was provided by Sam Elters and Al Hanson of Mohave County Public Works.

Mohave County currently maintains Alamo Road three to four times a year at a cost of $800 per mile per year. As Alamo Road is approximately 50 miles long from Yucca to Alamo Lake, the annual cost is $40,000.

Whether the exchange goes through or not, the frequency of maintenance will be determined by the demand of area residents. The demand for maintenance is expected to increase with or without the exchange. Depending on the amount of people moving into the Dutch Flat area, Alamo Road may need to be maintained up to 12 times a year, an average of $120,000 per year. The county has based its prediction of maintaining Alamo Road 12 times a year on the historical data from similar roads in Golden Valley. The county maintains its road network in the Golden Valley area approximately once a month. The need to maintain Alamo Road will not increase to once a month until the population base in the Dutch Flat reaches that of Golden Valley.

The county has historically bladed the entire Alamo Road from where the pavement ends southeast of Yucca to Alamo Lake when the maintenance blading is performed. The county feels that this practice would continue even though the majority of the people would be using that portion of Alamo Road from Chicken Springs north to I-40.

The county has no standard policy on daily vehicle trips to determine the need for paving a road. The traffic count is considered along with the cost factor between blading and maintaining a dirt/gravel road. Also, the county tries to plan its road network to connect different parts of the county and to provide for a useful transportation network.

The cost of paving Alamo Road would be similar to Stockton Hill Road at a cost of $150,000 to $200,000 per mile.

16-3. Dues are paid yearly to the Homeowners Association, which is administered through Legend Land L.L.C., a subsidiary of Ironhorse Investors, Inc. The county is not being asked to enforce the CCRs, nor is it being asked to assume maintenance of the roads. Development (the actual construction of homes and people moving in) will occur at a pace dependent on factors other than just having nicely maintained roads, e.g., a Mohave County decision concerning the I-40 industrial corridor. In addition, the procedure being used to subdivide the land in this area is in accordance with the Mohave County General Plan.

16-4 The conflicts referred to in Table 1 would result from the increase in development due to the increased amount of private lands within an allotment. Improvements needed on private lands would be the responsibility of the rancher or residents. If conflicts could be resolved by fencing adjacent BLM lands, the BLM may assist on a case-by-case basis subject to available funding.

16-5 The final EIS (Chapter 4, Water resources) acknowledges the increase in sediment runoff that will likely occur on the selected lands.

16-6 The potential assessment of the selected/public lands is based according to Mohave County assessors on the fair market value of surrounding lands previously sold — parcels ranged from $50 to $267 per acre. The number of acres is multiplied by the fair market value and multiplied by a 16-percent assessment for Class Four lands, which consist mainly of agricultural properties and vacant land. That total is multiplied by the tax rate, which is based on the tax district where the parcel is located. This calculation is not based on lands having grazing status; if it were, the property tax would be substantially less.

However, It is important to note that once these lands are sold and developed, the fair market value per parcel will rise. The parcels will be assessed at the appropriate property legal class, resulting in a significant increase in property tax revenue for Mohave County that exceeds the initial $86,000 gain in private property taxes.

16-7 The section has been modified. See also responses 3-11 and 7-26.

16-8 The language in the final EIS has been modified to explain that under the proposed action, public access in the Dutch Flat and Hualapai Valley development areas would be limited to existing public roadway easements and the new roadway easements established by the proponent.

In Chapter 3, under Recreation opportunities/access, reference is made to a complete inventory report of all roads affected by the proposed exchange. That report is available at the BLM Kingman Field Office.

16-9 See response 7-28.

16-10 The groundwater study by Hargis & Associates does not contain a map of the wells in the Sacramento Valley. The 12-page table of well information in this groundwater study has not been reproduced in the final EIS; however, the final EIS (Chapter 3, Water resources) includes an expanded discussion of the depth to water in the Sacramento Valley. A copy of the groundwater resource report is available at the BLM Kingman and Phoenix field offices.

16-11 The section has been modified. See also responses 3-11 and 7-26.

16-12 An evaluation of the impacts to white-margined penstemon as a result of the proposed action was made in Chapter 4, Environmental consequences, Biological resources. The biological report (BLM 1997) prepared for this EIS provides a more detailed analysis of impacts to this species. White-margined penstemon is not listed as an endangered species; it is a former federal candidate, Category II species. The BLM considers it to be a sensitive species and it is ranked by the AGFD as rare in the state.

16-12 Some high-quality habitat for white-margined penstemon will unfortunately be lost. However, twice as much high-quality habitat is gained through the exchange as is lost. If areas surrounding houses are left as native desert, white-margined penstemon will be able to survive in small patches, a situation observed on private lands within the ACEC north of the Boriana Mine Road. Complete urbanization and continuous pavement would not allow white-margined penstemon to survive. Even zoning of five-acre lots, however, suggests that native desert would still occur between houses and other structures, leaving habitat for small patches of white-margined penstemon. The BLM strongly encourages Mohave County to address preservation of white-margined penstemon in the upcoming area plan for Dutch Flat. This cooperative effort would work for survival of the species, achieving better results.

The question of land-use planning on non-public lands is beyond the scope of this EIS; however, the BLM would be supportive of cooperative management efforts with Mohave County regarding white-margined penstemon habitat.

16-13 Air quality impacts: 48 acres of bladed roads per section (640 acres) if each section is fully subdivided. Blowing dust may occur during strong windy conditions, not unlike other development areas and bladed maintained roads throughout Mohave County.

Air quality impacts due to noise resulting from potential diesel generator use is not anticipated to be a problem due to anticipated initial potential low population densities in the area. With time, power lines will be installed as demand for electricity increases. In some areas where people live on private land in the exchange area, electric power service has already been installed.

16-14 The final EIS (Chapter 4, Water resources) discusses the potential for a lowered water table in the Dutch Flat area, as well as the likelihood of septic systems impacting groundwater quality.

16-15 The section has been modified. See also responses 3-11 and 7-26.

16-16 The comment has been noted and correction has been made to the text.

16-17 The utility corridors are delineated in the Kingman RMP and a map will be provided to you showing the utility corridors for your use in the Dutch Flat Area Plan.

17-1 Some of the parcels listed on Exhibit B of your letter are part of the selected/public lands of this land exchange and would go to private ownership if the exchange goes through. To add any other section now would mean that the additional sections would have to be presented within the public scoping process, essentially causing a restart of the project. The BLM is willing to consider a proposal for a land exchange with Mohave County for other lands needed within the proposed I-40 industrial corridor.

18-1 The correction has been made in Appendix A to read T. 17 N., R. 18 W.

18-2 See response 16-6.

19-1 The land pattern for this exchange was based on the Kingman RMP goals concerning land tenure adjustments. Lands proposed for disposal and acquisition were presented in the RMP. In addition, private landowners must be a willing participant in the exchange process. The federal government does not dictate that private landowners must enter into an exchange or control what lands the private land owners should make available for exchange. The record of decision will show which lands, if any, are to be exchanged based on the information presented in the EIS. During public scoping meetings held in June and July 1997, no alternative land patterns were presented to the BLM for analysis.

The time schedule for preparation of the EIS was not imposed by the proponent to the exchange. It has been the BLM's experience that an EIS-level analysis usually takes between 12 and 24 months from issuing the NOI to issuing the record of decision. The NOI for this EIS was issued on June 11, 1997. The projected date to release the record of decision is January 1999, approximately 18 months overall.

20-1 The BLM agrees with EPA in that a vision for this area is appropriate in terms of balancing development and environment. This vision exists within the context of the General Plan for Mohave County (March 1995), hereafter referred to as General Plan. This vision calls for protection of the environment, conservation of the county's natural resources and preservation and enhancement of historical, cultural, open space and recreational lands and structures. To meet this vision, the county has developed goals and policies that are used during requests for rezoning of areas, applications for building permits, etc. One particularly applicable goal is to retain the beauty, the natural setting and resources and the rural character of the county while providing opportunities for coordinated growth and development (General Plan, Goal 10, page 84).

The selected federal lands involved in the land exchange proposal would be subject to development according to the vision of the General Plan. These lands are within rural development areas designated in the General Plan. Under the General Plan, the subject area is further categorized as rural residential, which permits single-family development on lots of five or more acres. However, the zoning in the subject area is largely designated AR 36A, which allows one residence per 36 acres and other compatible uses. Lot owners within the AR 36A zone who wish to subdivide, or upzone, their 36-acre parcels are required to submit a minor land division plat or a formal subdivision plat to the Mohave County Planning and Zoning Department with formal approval/disapproval decision residing with the Mohave County Board of Supervisors. In Arizona, the power and duties regarding matters of planning, zoning and subdivision platting in unincorporated areas have been delegated from the state to the counties under Arizona Revised Statutes § 11-800.

The Mohave County Board of Supervisors has decided that it is appropriate to prepare an area plan for the lands in the exchange area. The area plan process provides a mechanism for the county and local residents to plan for future growth and development of communities at a greater level of detail than can be accomplished at a countywide level. The area plan enables residents and landowners in an area to tailor the plan to specific community needs. The private lands adjacent to the selected federal lands, which are owned by the exchange proponent, Ironhorse Investors, Incorporated, an Arizona Corporation, are currently marketed and sold in the private sector as 160- and 40-acre rural ranch subdivisions lots (approximately 700 parcels have been sold). The area plan is the most appropriate place for any restrictive covenants to development to be decided. The process for developing an area plan ensures involvement of the current owners of parcels, Mohave County, the proponent to the land exchange and the BLM.

21-1 See Chapter 4 of the draft EIS under Effects to each ranch, Hackberry allotment on page 37. The final EIS has been modified to reflect the easements reserved for the boundary and pasture fences on the selected/public lands.

21-2 The BLM does not compensate for the loss of livestock use on BLM lands resulting from actions such as land exchanges. BLM grazing permits or leases no right, title or interest held by the U.S. in any lands or resources (43 CFR 4130.2[c]).

21-3 See Chapter 4, Unavoidable adverse impacts.

21-4 The 65,970 acres of selected/public lands, excluding the freeway parcels, were valued at $4,900,000, based on the entire acreage being sold in one block.

Plan conformance determination

The following determinations were done according to the guidance in 43 CFR 1601.0-5 (c) and in the Kingman RMP.

Part 1. Acquisition of lands not specifically identified in the RMP

Acquisition areas were identified in the RMP (page 8) according to the following land tenure acquisition criteria.

1. Bring under federal administration lands with important cultural, recreational, scenic, wildlife, watershed/riparian-wetland, soil and botanical values best managed for the public benefit and protected as public lands.
2. Ensure the survival or recovery of special status animal or plant species.
3. Eliminate surface and subsurface inholdings within designated wilderness.
4. Provide for access to large blocks of federal lands.
5. Consolidate surface and subsurface ownership in areas identified for retention.

Lands in three areas were not identified for acquisition.

1. T. 14 N., R. 17 W., secs. 1, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33 and 35 – Within this area, sec. 3 is privately owned and secs. 10 and 14 are owned by the state of Arizona. The remainder of this township and range is owned by the Santa Fe Pacific Railroad. When the Santa Fe Pacific Railroad lands were made available for acquisition, it was determined that acquisition criteria points 1 and 4 (above) applied. Point 1 applied because this area is in Category III desert tortoise habitat and blocking the areas would ensure the ability to manage it in the long term. Point 4 applied in that access to the large blocks of public lands to the south and west would be assured.
2. T. 13 N., R. 14 W., secs. 1 and 3 and T. 14 N., R. 14 W., secs. 11, 13, 23, 25, 27, 33 and 35 – This area is just east of the acquisition area in the McCracken Mountains. Acquisition would substantially block public ownership in this area. The area is currently in Category 3 habitat; it was determined that criteria point 1 applied for desert tortoise and general wildlife.
3. This area of scattered parcels throughout the northern part of the exchange area is adjacent to public lands and acquisition lands, furthering the goal of blocking public ownership. These lands are on the fringe of areas considered important for acquisition according to criteria points 1, 2 and 4.

Part 2. Disposal of lands not specifically identified in the RMP

Within exchange/consolidation areas, land owners/permittees may apply for acquisition of any lands within the allotments areas as long as such lands do not have significant resource, cultural and/or environmental values, the loss of which cannot be appropriately mitigated.

The RMP (page 8) states that when selecting lands for disposal, priority will be given to public lands needed to meet the needs of local, county and state governments or individuals, public lands the size, location or other physical characteristics of which make them difficult or uneconomical to manage and public lands whose disposal will resolve unintentional unauthorized trespass. A plan amendment is being prepared to give the public the opportunity to comment on whether to dispose of the lands through exchange.

All parcels listed below will be considered for disposal in the Hualapai exchange, i.e., may or may not actually be transferred to private ownership. The decision whether to dispose of these lands will be documented in the record of decision based on the EIS information.

Parcel descriptions

Each of the parcels not slated for disposal is described (township, range and section) and the rationale for disposal consideration is given.

T. 15 N., R. 15 W., secs. 8, 16, 18, 20, 22, 28, 30 and 32 – These sections were considered for disposal when the proponents made clear that they would not make the surrounding sections available for acquisition. Therefore, the objective of blocked ownership could not be reached unless the BLM was willing to make the sections available for disposal. BLM resources staff and management reviewed the RMP planning criteria under the issues of Wildlife habitat/threatened and endangered species and Land tenure, determining that these parcels should be considered for disposal within the Hualapai exchange. Disposing of these lands would block ownership into private holdings. If the lands were not disposed of, expected sales and development of intermingled private lands would make the public lands difficult or uneconomical to manage. The expected sale and development of the intermingled private lands would also make management for desert tortoise species and habitat goals impossible in this area.

T. 16 N., R. 16 W., sec. 16 and a portion of sec. 36 -- These sections are surrounded by private and state-owned lands. Acquisition of the privately owned lands from the Santa Fe Pacific Railroad is not viable as these lands are important to their overall development plans. Acquisition of the state lands is presently impossible as the state cannot exchange lands under current policy. Managing these parcels would be difficult in intermingled ownership.

T. 16 N., R. 18 W., sec. 16, N½ – Disposal of this section was reviewed with respect to the issues of Wildlife habitat and Land tenure. The section is bordered to the north and east by private lands not owned by the Santa Fe Pacific Railroad. A large desert wash area in the south half of the section (to be retained in public ownership) is important for wildlife movement.

T. 16.5 N., R. 17 W., secs. 22, 26 and 36 – These three sections within the White-Margined Penstemon ACEC were not identified for disposal. Alamo Road runs through all three sections and they are surrounded by private lands. The private lands, owned by the Santa Fe Pacific Railroad, are prime for development due to the proximity of Alamo Road. The overall proposal within the ACEC would transfer 6.5 sections to the BLM while three sections would go into private ownership, a net gain of 3.5 sections to the BLM within the ACEC. The three sections were determined to be considered for disposal in the Hualapai exchange after reviewing the planning criteria for special area designations and land tenure. Potential land uses (development) would make it difficult to manage the three sections along Alamo Road.

T. 16.5 N., R. 18 W., sec. 28 – This section is surrounded by private land not owned by the Santa Fe Pacific Railroad. The private land to the south and west is currently being developed. This section has no management potential for any of the planning criteria for any of the issues in the RMP. BLM resources staff determined that it should have been included in the RMP for disposal.

T. 17 N., R. 18 W., sec. 24 – This section has private lands on the north and east, Interstate 40 goes through it and the railroad is about 1/8-mile west. Within the industrial corridor proposed by the Mohave County Economic Development Authority, it was determined that this section could be considered for disposal with respect to proposed future uses of the overall area.

T. 18 N., R. 18 W., sec. 25 – This section, bordered on the north, east and south by private lands not owned by the Santa Fe Pacific Railroad, would be difficult to manage for the long term, given the existing intermingled private ownership that BLM has no plans to acquire.

Selected/public lands

Gila and Salt River Meridian, Arizona

T. 15 N., R. 15 W.,
sec. 8, all;
sec. 16, all;
sec. 18, lots 1 through 4, incl., E½W½, E½;
sec. 20, all;
sec. 22, all;
sec. 28, all;
sec. 30, lots 1 through 4, incl., E½W½, E½;
sec. 32, all.

T. 15 N., R. 16 W.,
sec. 2, lots 1 through 4, incl., S½N½, S½;
sec. 4, lots 1 through 4, incl., S½N½, S½;
sec. 6, lots 1 through 7, incl., S½NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, lots 1 through 4, incl., E½W½, E½;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, lots 1 through 4, incl., E½W½, E½;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 15 N., R. 17 W.,
sec. 2, lots 1 through 4, incl., S½N½, S½;
sec. 4, lots 1 through 4, incl., S½N½, S½;
sec. 6, lots 1 through 7, incl., S½NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all
sec. 16, all;
sec. 18, lots 1 through 4, incl., E½W½, E½;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;

sec. 30, lots 1 through 4, incl., E½W½, E½;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 16 N., R. 16 W.,
sec. 16, all;
sec. 32, all;
sec. 36, SE¼NW¼, E½SW¼.

T. 16 N., R. 17 W.,
sec. 2, S½NW¼, SW¼;
sec. 4, lots 1 through 4, incl., S½N½,S½;
sec. 6, lots 1 through 7, incl., S½NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec: 14, all;
sec. 16, all;
sec. 18, lots 1 through 4, incl., E½W½, E½;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30; lots 1 through 4, incl., E½W½, E½;
sec. 32, E½;
sec. 34, all;
sec. 36, W½, SW¼NE¼, S½SE¼.

T. 16 N., R. 18 W.,
sec. 2, lots 1 through 4, incl., S½N½, S½;
sec. 4, lots 1 through 4, incl., S½N½, S½;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, N½.

T. 16½ N., R. 17 W.,
sec. 20, lots 1 through 4, incl., S½;
sec. 22, lots 1 through 4, incl., S½;
sec. 26, all;
sec. 28, all;
sec. 30, lots 1 through 4, incl., E½W½, E½;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 16½ N., R. 18 W.,
sec. 22, lots 1 through 4, incl., SW¼NW¼, S½;
sec. 24, lots 1 through 4, incl., S½;
sec. 26, all;
sec. 28, E½, SW¼, E½NW¼, SW¼NW¼;

sec. 34, all;
sec. 36, W½, NE¼, W½SE¼, NE¼SE¼.

T. 17 N., R. 17 W.,
sec. 20, all;
sec. 28, all;
sec. 30, lots 1 through 20, incl., E½;
sec. 32, all;
sec. 34, all.

T. 17 N., R. 18 W.,
sec. 24, all.

T. 18 N., R. 17 W.,
sec. 20, all;
sec. 30, lots 1 through 20, incl., E½.

T. 18 N., R. 18 W.,
sec. 26, all;
sec. 36, less the 200-foot Atchison, Topeka and Santa Fe Railway Company right-of-way containing 24.40 acres.

T. 24 N., R. 14 W.,
sec. 18, all;
sec. 20, E½;
sec. 30, N½.

T. 24 N., R. 15 W.,
sec. 4, lots 1 through 4, incl., S½N½, S½;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 22, E½;
sec. 24, all;
sec. 26, E½.

T. 25 N., R. 15 W.,
sec. 6, lots 1 through 7, incl., S½NE¼, SE¼NW¼, W½SW¼, SE¼;
sec. 8, all;
sec. 18, lots 1 through 4, incl., E½, E½W½.

T. 25 N., R. 16 W.,
sec. 2, lots 1 through 4, incl., S½N½, S½;
sec. 12, all.

T. 26 N., R. 16 W.,
sec. 36, all.

The areas described aggregate approximately 68,979.02 acres.

Offered/private lands

Gila and Salt River Meridian, Arizona
T. 13 N., R. 14 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 3, lots 1 through 4, incl., S½N½, S½;
sec. 5, lots 1 through 4, incl., S½N½, S½.

T. 14 N., R. 14 W.,
sec. 7, lots 1 through 4, incl., E½W½, E½;
sec. 11, all;
sec. 13, all;
sec. 17, all;
sec. 21, all;
sec. 23, all;
sec. 25, all;
sec. 27, all;
sec. 29, all;
sec. 33, all;
sec. 35, all.

T. 14 N., R. 15 W.,
sec. 5, all;
sec. 7, all;
sec. 17, all;
sec. 19, lots 1 through 4, incl., E½W½, E½;
sec. 21, all;
sec. 29, all;
sec. 31, lots 1 through 4, incl., E½W½, E½;
sec. 33, all.

T. 14 N., R. 17 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 5, lots 1 through 4, incl., S½N½, S½;
sec. 7, lots 1 through 4, E½W½, E½;
sec. 9, all;
sec. 11, all;
sec. 13, all;
sec. 15, all;
sec. 17, all;
sec. 19, lots 1 through 4, E½W½, E½;
sec. 21, all;
sec. 23, all;
sec. 25, all;
sec. 27, all;
sec. 29, all;
sec. 31, lots 1 through 4, E½W½, E½;
secs. 33, and 35.

T. 15 N., R. 15 W.,
sec. 3, lots 1 through 4, incl., S½N½, S½;
sec. 5, lots 1 through 4, incl., S½N½, S½;

sec. 11, all;
sec. 23, N½, N½SW¼, SE¼SW¼, SE¼.

T. 16 N., R. 15 W.,
sec. 5, lots 1 through 4, incl., SW¼NE¼, S½NW¼, S½;
sec. 7, lots 1 through 4, incl., E½W½, E½;
sec. 9, all;
sec. 17, all;
sec. 19, lots 1 through 4, incl., E½W½, E½;
sec. 21, all;
sec. 29, all;
sec. 31, E½;
sec. 33, all.

T. 16 N., R. 16 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 3, lots 1 through 4, incl., S½N½;
sec. 25, E½.

T. 16½ N., R. 15 W.,
sec. 19, lots 1 through 6, incl., E½SW¼, SE¼;
sec. 21, S½;
sec. 29, all;
sec. 31, lots 1 through 4, incl., E½W½, E½;
sec. 33, all.

T. 16½ N., R. 16 W.,
sec. 19, lots 1 through 4, incl., E½W½, E½;
sec. 21, lots 1 through 4, incl., S½;
sec. 23, all;
sec. 25, all;
sec. 27, all;
sec. 29, all;
sec. 33, all;
sec. 35, all.

T. 17 N., R.14 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 3, lots 1 through 4, incl., S½N½, S½;
sec. 4, SW¼NE¼, NW¼SW¼;
sec. 5, lots 1 through 4, incl., S½N½, S½;
sec. 6, SE¼SE¼;
sec. 7, E½NE¼NE¼;
sec. 11, N½.

T. 17 N., R. 15 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 3, lots 1 through 4, incl., S½N½, S½;
sec. 5, lots 1 through 4, S½N½, S½;
sec. 7, lots 1 through 4, E½W½, E½;
sec. 9, all;
sec. 11, all;
sec. 15, all;

sec. 17, all;
sec. 19, lots 1 through 4, incl., E½W½, E½;
sec. 21, all;
sec. 23, all;
sec. 27, all;
sec. 29, NE¼, NE¼NW¼, SW¼SW¼, E½SE¼;
sec. 31, lots 1 through 4, incl., E½W½, E½;
sec. 33, all.

T. 17 N., R. 16 W.,
sec. 13, all;
sec. 15, E½, E½W½, NW¼NW¼;
sec. 21, E½SE¼;
sec. 23, all;
sec. 25, all;
sec. 27, all;
sec. 33, E½W½, SW¼NW¼, W½SW¼, E½;
sec. 35, all.

T. 18 N., R. 14 W.,
sec. 7, lots 1 through 4, incl., E½W½, E½;
sec. 19, lots 1 through 3, incl., E½W½, E½;
sec. 31, lots 3 and 4, E½SW¼, E½.

T. 18 N., R. 15 W.,
sec. 1, lots 1 through 4, incl., S½N½, S½;
sec. 3, lots 1 through 4, incl., S½N½, SW¼, N½SE¼;
sec. 5, lots 1 through 4, incl., S½N½, S½;
sec. 7, lots 1 through 4, incl., NE¼, E½NW¼, NE¼SW¼, NE¼SE¼, W½SE¼;
sec. 9, all;
sec. 11, NW¼NE¼, SE¼NE¼, NE¼NW¼, SW¼, SW¼SE¼;
sec. 13, NW¼NE¼, NW¼NW¼, E½W½, SE¼SE¼;
sec. 15, all;
sec. 17, NE¼, NE¼NW¼, S½NW¼, S½;
sec. 19, lots 1 through 4, incl., E½W½, E½;
sec. 21, all;
sec. 23, NE¼NE¼, W½, W½SE¼;
sec. 25, W½NE¼, NE¼NW¼, W½SW¼, N½SE¼;
sec. 26, W½NE¼, SE¼NW¼;
sec. 27, all;
sec. 29, all;
sec. 31, lots 1 through 4, incl., E½W½, E½;
sec. 33, all;
sec. 35, N½NE¼, SE¼NE¼, W½, S½SE¼.

T. 19 N., R. 14 W.,
sec. 19, NE¼, N½SE¼, SE¼SE¼;
sec. 30, NW¼NE¼, E½NW¼;
sec. 31, lots 1 through 4, incl., NE¼NE¼, E½W½, W½E½, SE¼SE¼.

The areas described aggregate approximately 70,245.31 acres.

Appendix C

Water resources of the selected/public lands

	Name	[illegible]	[illegible]	Type	[illegible]
1	Marshall tank *	T. 25 N., R. 15 W., sec. 8, SE¼SE¼ (Music Mtns SW)	0019	P	Fair shape; completed 1-29-42; 3.5 acre-feet capacity
2	Easy Way earthen pond **	T. 24 N., R. 15 W., sec. 8, SW¼SW¼ (Long Mtn)	0077	P	Shallow, overgrown pond fed by Truxton Water Co. private well and pipeline
3	Unnamed pond	T. 24 N., R. 15 W., sec. 10, NE¼NW¼ (Antares)	0077	P	Small pond, good shape, fed by Truxton Water Co. private well and pipeline
4	Unnamed reservoir *	T. 18 N., R. 18 W., sec. 36, NE¼NE¼ (Yucca NW)	0011	P	Nonfunctional, large shallow pond
5	Little Nellie pipeline pond **	T. 18 N., R. 17 W., sec. 20, NW¼NW¼ (Yucca NE)	0011	P	Shallow depression, nonfunctional, once fed by Little Nellie pipeline
6	Unnamed reservoir	T. 16 N., R. 17 W., sec. 16, SW¼NE¼ (Buck Mtns NE)	0051	P	Good shape; two dikes channel water into pond
7	Truxton Water Co. pipeline system	T. 24 N., R. 15 W., sec. 4, lot 4, NW¼NW¼ (Music Mtns SW)	0077	CS	Hawk Trough, good shape; fed by pipeline from Truxton Water Co. private well
		T. 24 N., R. 15 W., sec. 8, W½ (Long Mountain) **	0077	CS	Pipeline – good shape
		T. 24 N., R. 15 W., sec. 10 (Antares)	0077	CS	Pipeline – good shape
		T. 24 N., R. 15 W., sec. 14 (Antares)	0077	CS	Pipeline – good shape
		T. 24 N., R. 15 W., sec. 26, W½SE¼ (Antares)	0077	CS	Pipeline – good shape
8	Willow Creek end water *	T. 18 N., R. 17 W., sec. 30, SW¼SW¼ (Yucca NW)	0011	CS	Pipeline fed by Willow Spring in sec. 15, T. 18 N., R. 16 W.; tank and trough full of water; good shape
9	HQ pipeline and trough	T. 17 N., R. 17 W., sec. 20, SE¼SE¼ (Yucca SE)	0043	CS	Trough full and in good shape; serves as waterhaul; pipeline broken
10	Middle Water pipeline and tank	T. 16.5 N., R. 17 W., sec. 26, NE¼SW¼ (Yucca SE)	0051	CS	Storage tank in good shape, has water and is at end of Middle Water pipeline system
11	Crossman Peak HQ well pipeline *	T. 16 N., R. 18 W., sec. 16, NE¼ (Buck Mountains)	0025	CS	Black plastic pipeline - no longer functional
12	White's well pipeline	T. 16 N., R. 17 W., sec. 14, NW¼NW¼ (Buck Mountains NE)	0051	CS	Pipeline broken, in poor shape
		T. 16 N., R. 17 W., sec. 12, NW¼NW¼ (Dutch Flat NW)	0051	CS	Pipeline broken, in poor shape

13	La Cienega HQ well pipeline system	T. 15 N., R. 17 W., sec 36, SE¼SE¼ (Dutch Flat SW)	0051	CS	Bobcat tank and trough– good shape, end of pipeline system
		T. 16 N., R. 16 W., sec. 32, SE¼SE¼ (Dutch Flat NW)	0051	CS	Pipeline crosses SE¼ of sec. 32; good shape, has water
		T. 15 N., R. 16 W., sec. 8, NW¼NW¼ (Dutch Flat NW)	0051	CS	Pipeline crosses northwest corner of sec. 8; good shape
		T. 15 N., R. 16 W., sec. 18, W½ (Dutch Flat NW)	0051	CS	Pipeline in good shape, holding water
		T. 15 N., R. 17 W., sec. 24, E½E½, (Dutch Flat NW)	0051	CS	Pipeline follows east section line of sec. 24; good shape
14	New Well pipeline	T. 15 N., R. 15 W., sec. 30, SE¼SE¼ (Dutch Flat SE)	0021	CS	Pipeline recently reworked; good shape
		T. 15 N., R. 15 W., sec 16, E½ (Beecher Canyon)	0021	CS	Pipeline in good shape, holding water
15	Section 34 waterhaul	T. 17 N., R. 17 W., sec. 34, NE¼NE¼, (Yucca SE)	0043	WH	Storage tank and trough full of water, good shape
16	Sacramento Valley catchment 1	T. 24 N., R. 14 W., sec. 18, SW¼SW¼ (Antares)	0042	CA	AGFD No. 86; good shape; concrete apron, covered storage tank and walk-in trough; holding water
17	Mindy Mill well *	T. 17 N., R. 17 W., sec. 30, lot 20 (Yucca SE)	0043	well	Well with submersible pump on abandoned millsite; drilled in 1978; water level of 440 feet in 1979

[1] Grazing allotments

0011 = Boriana
0019 = Cedar Canyon
0021 = Chicken Springs
0025 = Crossman Peak
0042 = Hackberry
0043 = Happy Jack Wash
0051 = La Cienega
0077 = Walapai Ranch

[2] Type of water source

P = stockpond
CS = conveyance system
WH = waterhaul
CA = wildlife catchment

* These water sources would be retained in federal ownership under the equal appraised value alternative

** These water sources would be retained in federal ownership under the equal appraised value alternative if mining claim issues cannot be resolved

Appendix D

Water resources of the offered/private lands

1	Haystack Tank	T. 17 N., R. 16 W., sec. 27, SW¼NW¼ (Creamery Canyon)	0051	P	Constructed 3-1-42; 0.9 acre-feet capacity; poor shape; rock/concrete spillway blown out
2	Lower Tank	T. 14 N., R. 17 W., sec 15, SW¼NE¼ (Buck Mountains SE)	0051	P	Constructed 3-1-42; 2.0 acre-feet capacity; good shape -- held water early in 1997
3	Township Tank	T. 14 N., R. 15 W., sec. 19, NW¼NW¼ (Dutch Flat SW)	0021	P	Poor shape -- pond breached for some time; no storage capacity
4	Coyote Tank	T. 14 N., R. 14 W., sec. 21, SE¼SE¼ (Groom Spring)	0021	P	Constructed 1-1-40; 2.0 acre-feet capacity; fair shape
5	Mid Bull Canyon Spring	T. 18 N., R. 15 W., sec. 11, SW¼SW¼ (Hibernia Peak)	0050	DS	Spring flows into two concrete dams in drainage below well; good shape; ponds almost full and seepage on 7-16-97
6	Thimble Spring	T. 18 N., R. 15 W., sec. 35, SE¼SW¼ (Hibernia Peak)	0050	DS	Spring begins below large rock outcrop; pipe and trough, seepage only, 9-11-97
7	Hawk Nest Spring	T. 18 N., R. 14 W., sec. 7, NW¼NE¼ (Hibernia Peak)	0050, 0083	DS	Horizontal well with pipe to concrete trough in corral; dry 7-21-97
8	Round Valley Spring and Pine Peak Pipeline	T. 16.5 N., R. 16 W., sec. 23, lot 4, NW¼NW¼ (Creamery Canyon)	0051	DS	4-foot diameter circular springbox with metal cover; pipeline to circular storage tank and two troughs on public lands in SE¼SE¼, sec. 36, T. 17 N., R. 16 W.; pipeline continues into valley feeding tanks and troughs system
9	Mineral Spring	T. 17 N., R. 15 W., sec. 15, SW¼SE¼ (Diamond Joe Peak)	0051	DS	Aerial check 9-10-97; broken pipeline and trough in SE¼SW¼, sec. 15; dry
10	Blue Tank Spring	T. 19 N., R. 14 W., sec. 31, SW¼NW¼ (Hibernia Peak)	0083	US	Spring begins at rock dike across drainage, collects in pools; flow of 1 gpm 9-11-97
11	Undeveloped Spring	T. 18 N., R. 15 W., sec. 3, NW¼NE¼ (Hibernia Peak)	0050	US	Aerial check 9-10-97; moist soil and seepage around lower stand of cottonwoods in drainage
12	Hanging Shovel Spring	T. 18 N., R. 15 W., sec. 9, SE¼NE¼ (Hibernia Peak)	0050	US	Begins by large cottonwood tree and willow stand; 0.2 gpm flow on 9-11-97
13	Mountain Side Spring	T. 18 N., R. 15 W., sec. 11, NW¼NE¼ (Hibernia Peak)	0050	US	Aerial check 9-10-97; flowing spring begins lower in drainage on public lands in NE¼SE¼, sec. 11

14	Leaping Lizard Spring	T. 18 N., R. 15 W., sec. 11, SE¼SW¼ (Hibernia Peak)	0050	US	Seep in Bull Canyon 1.5 miles downstream of Mid Bull Canyon spring and well; seepage only, 7-16-97
15	Horny Toad Spring	T. 18 N., R. 15 W., sec. 23, SE¼SW¼ (Hibernia Peak)	0050	US	Undeveloped seep at rock dike across drainage; seepage only, 9-11-97
16	Hibernia Canyon Spring	T. 18 N., R. 15 W., sec. 26, SW¼NE¼ (Hibernia Peak)	0050	US	Undeveloped spring in Hibernia Canyon above corral; 5 gpm in 1984; seepage only in pools in drainage, 7-14-97
17	Black Worm Spring	T. 18 N., R. 15 W., sec. 27, NE¼NE¼ (Hibernia Peak)	0050	US	Undeveloped spring in side drainage to Hibernia Canyon; seepage only, 9-11-97
18	Undeveloped Spring	T. 18 N., R. 15 W., sec. 27, NW¼SE¼ (Hibernia Peak)	0050	US	Aerial check 9-10-97; entire reach of Hibernia Canyon in sec. 27 flowing
19	Undeveloped Spring	T. 18 N., R. 15 W., sec. 33, SW¼NE¼ (Hibernia Peak)	0050	US	Aerial check 9-10-97; dry, but grapevine and willow in drainage
20	Undeveloped Spring	T. 18 N., R. 15 W., sec. 35, NW¼NW¼ (Hibernia Peak)	0050	US	Aerial check 9-10-97; dry; seep is up drainage from an old burn scar
21	Megalith Spring	T. 17 N., R. 15 W., sec. 3, SE¼NE¼ (Hibernia Peak)	0051	US	Seepage at large rock outcrop across drainage upstream from Thimble Spring
22	Lower Bull Canyon Spring	T. 18 N., R. 14 W., sec. 7, NW¼SE¼ (Hibernia Peak)	0050	US	Spring begins below large cottonwood in bend of Bull Canyon – flows into rock potholes; 0.075 gpm flow, 9-11-97
23	Days End Spring	T. 18 N., R. 14 W., sec. 17, NW¼SW¼ (Hibernia Peak)	0050	US	Spring begins at rock outcrop across side drainage to Bull Canyon; seepage only, 9-11-97
24	Marbled Rock Spring	T. 18 N., R. 14 W., sec. 19, NW¼NE¼ (Hibernia Peak)	0050	US	Spring begins at rock outcrop and overhang in side drainage to Hibernia Canyon; dry 7-21-97
25	Dead Horse Canyon	T. 17 N., R. 14 W., sec. 3, NW¼SW¼ (Hibernia Peak)	0028	US	Not field verified; spring location from water rights filing in Pilgrim Wash
26	Undeveloped Spring	T. 17 N., R. 14 W., sec. 4, SW¼NE¼ (Hibernia Peak)	0083	US	Aerial check, 9-10-97; Pilgrim Wash in sec. 4 flowing; ground check needed
27	Undeveloped Spring	T. 17 N., R. 14 W., sec. 4, NW¼SW¼ (Hibernia Peak)	0050	US	Aerial check, 9-10-97; Pilgrim Wash in sec. 4 flowing; ground check needed
28	Upper Pilgrim Spring	T. 17 N., R. 14 W., sec. 6, SE¼SE¼ (Hibernia Peak)	0050	US	Aerial check, 9-10-97; water flowing in Pilgrim Wash; ground check needed
29	Pine Flat Spring	T. 18 N., R. 15 W., sec. 7, SE¼NW¼ (Wabayuma Peak)	none	US	Spring begins in drainage below Pine Flat camping area; 0.24 gpm flow, 7-15-97

30	Upper Bull Canyon Spring	T. 18 N., R. 15 W., sec. 17, SW¼NW¼ (Wabayuma Peak)	0050	US	Spring begins at lone cottonwood above side drainage to Bull Canyon; dry, 9-10-97
31	Hibernia Spring	T. 17 N., R. 15 W., sec. 5, SW¼NE¼ (Wabayuma Peak)	0051	US	Aerial check, 9-10-97; cattails, willow, cottonwood and walnut; moist
32	Cottonwood (aka North Creamery Canyon) Spring	T. 17 N., R. 15 W., sec. 31, SW¼SW¼ (Creamery Canyon)	0051	US	Spring begins in side drainage to Creamery Canyon; access is on existing public lands, SE¼SE¼, sec. 36, T. 17 N., R. 16 W.; 1/8 gpm flow, 6-23-97
33	Quail Covey Spring	T. 17 N., R. 15 W., sec. 17, SW¼SW¼ (Creamery Canyon)	0051	US	Seep at base of rock outcrop in drainage; seepage only, 6-25-97
34	Joe Cat Spring	T. 17 N., R. 15 W., sec. 29, SW¼SW¼ (Creamery Canyon)	0051	US	Seep begins at base of rock outcrop in side drainage to Creamery Canyon; moist soil, 6-24-97
35	Round Valley Spring	T. 17 N., R. 15 W., sec. 33, SW¼SW¼ (Creamery Canyon)	0051	US	Aerial check, 9-10-97; willows in NW¼SW¼; dry
36	Banded Rock Spring	T. 16.5 N., R. 16 W., sec. 25, SW¼SW¼ (Creamery Canyon)	0051	US	Small seep in Cow Canyon ¼-mile above spring/well shown on USGS map; moist soil, 7-22-97
37	Lower Cow Creek Spring	T. 16.5 N., R. 16 W., sec. 35, SE¼SE¼ (Creamery Canyon)	0051	US	Undeveloped spring in Cow Canyon just above road crossing; seepage, 7-22-97
38	Black Willow Spring	T. 17 N., R. 15 W., sec. 27, NW¼NW¼ (Diamond Joe Peak)	0008	US	Aerial check, 9-10-97; lone cottonwood tree; dry
39	Fly or Dripping Spring	T. 16.5 N., R. 15 W., sec. 19, NW¼SE¼ (Diamond Joe Peak)	0051	US	Aerial check, 9-10-97; small patch of willows near top of drainage; dry
40	Undeveloped Spring	T. 16.5 N., R. 15 W., sec. 31, NE¼SE¼ (Diamond Joe Peak)	0051	US	Aerial check, 9-10-97; spring in drainage, collects in potholes; willows and cattails; flowing
41	Right Hand Canyon	T. 16.5 N., R. 15 W., sec. 33, NE¼NW¼ (Diamond Joe Peak)	0008	US	Aerial check, 9-10-97; cottonwoods, walnut and cattails; no water seen
42	Big Johnnie Spring	T. 16.5 N., R. 15 W., sec. 33, SE¼NE¼ (Diamond Joe Peak)	0008	US	Aerial check, 9-10-97; cottonwood seen; no water
43	Prickly Pear Spring	T. 16 N., R. 15 W., sec. 7, NW¼NE¼ (Beecher Canyon)	0051	US	Small seep below rock dike in side canyon to Tompkins Canyon; 1/8 gpm flow, 9-10-97
44	Little Willie Spring	T. 16 N., R. 15 W., sec. 9, NW¼SW¼ (Beecher Canyon)	0051	US	Undeveloped spring in drainage headwaters; not field verified
45	Bar I-L Pipeline, Tank and Trough	T. 17 N., R. 16 W., sec. 23, NE¼SW¼ (Creamery Canyon)	0051	CS	Pipeline crosses S¼½1/2, sec. 23; fed by Bar I-L well in sec. 19, T. 17 N., R. 15 W.; recently reworked pipeline in good shape; feeds circular storage tank with stucco cover and rectangular trough

46	Cottonwood Canyon Pipeline	T. 17 N., R. 15 W., sec. 31, SE¼NE¼ (Creamery Canyon)	0051	CS	Pipeline fed by Cottonwood Spring on public lands in sec. 32; pipeline broken and in poor shape; trough in SE¼NE¼ in good condition, dry
		T. 17 N., R. 16 W., sec. 25, S½ (Creamery Canyon)	0051	CS	Pipeline in poor shape and broken below Cottonwood Spring
47	Lyle Trimble Well Pipeline	T. 17 N., R. 16 W., sec. 27, SE¼SE¼ (Creamery Canyon)	0051	CS	Pipeline from well in sec. 26 crosses southeast corner of sec. 27; broken, no water
48	Storage Tank and Trough	T. 17 N., R. 15 W., sec. 17, NW¼SE¼ (Creamery Canyon)	0051	CS	Defunct pipeline from Upper and Lower Grapevine Springs used to feed this round metal storage tank and two troughs; fair shape, dry
49	Water Tank	T. 17 N., R. 15 W., sec. 19, NE¼NW¼ (Creamery Canyon)	0051	CS	Cement sunken storage tank on hilltop; poor shape; was fed by pipelines from Grapevine Springs and Blue Mary Spring
50	Pine Peak Pipeline	T. 16.5 N., R. 16 W., sec. 21, N½ (Creamery Canyon)	0051	CS	Pipeline from Round Valley Spring in sec. 23 crosses northern portion of sec. 21; good shape, holding water
		T. 16.5 N., R. 16 W., sec. 19, SE¼SE¼ (Creamery Canyon)	0051	CS	Pipeline from Round Valley Spring in sec. 23 crosses S½ of sec. 19; feeds circular metal tank and concrete trough – both full of water and in good condition
51	Beecher Spring Pipeline System	T. 16 N., R. 15 W., sec. 21, SE¼NW¼ (Beecher Canyon)	0051	CS	Pipeline from Beecher Spring in sec. 16 leads to two concrete troughs -- one each in secs. 16 and 21; pipeline broken and troughs in poor shape
52	Coyote Well Pipeline System	T. 14 N., R. 14 W., sec. 17, NW¼SW¼ (Dutch Flat SE)	0021	CS	Pipeline from Banks Well on private land in sec. 13, T. 14 N., R. 15 W. feeds circular trough in corral in Sec. 17; trough in good shape and full of water; pipeline from trough to Coyote Well, redone in 1995, in good shape
		T. 14 N., R. 14 W., sec. 21, SW¼SW¼ (Groom Spring)	0021	CS	Buried pipeline crosses southwest corner of sec. 21; good shape, transporting water to Coyote Well tank/trough
		T. 14 N., R. 14 W., sec. 27, SW¼SW¼ (Groom Spring)	0021	CS	Buried pipeline crosses southwest corner of sec. 27; in good shape & transporting water to Coyote Well tank/trough
53	Section 11 Watershed	T. 17 N., R. 14 W., sec. 11, SE¼NW¼ (Gunsight Canyon)	0028	WH	Circular concrete storage tank and rectangular concrete trough in saddle off main road; structurally good; dry

54	Section 31 Water Tank	T. 14 N., R. 17 W., sec. 31, NE¼NW¼ (Buck Mountains SE)	0025	WH	Fenced circular metal storage tank; poor shape with bullet holes
55	Bill's Well	T. 19 N., R. 14 W., sec. 19, NW¼SE¼ (Dean Peak)	0083	well	Well with solar-powered submersible pump; drilled in 1992; reported water level of 80 feet; storage tank is metal cylinder on its side and circular trough; all in good shape and holding water
56	Mid Bull Canyon Well	T. 18 N., R. 15 W., sec. 11, SW¼SW¼ (Hibernia Peak)	0050	well	Concrete-lined hand-dug well built in 1958; water level 12.9 feet on 7-16-97; being equipped with solar-powered submersible pump; two circular metal storage tanks and three concrete troughs; good condition
57	Hawk Nest Well	T. 18 N., R. 14 W., sec. 7, NW¼NE¼ (Hibernia Peak)	0050, 0083	well	Well drilled in 1957; 6-inch diameter steel casing; no longer equipped with windmill; water level of 29 feet on 7-21-97; circular metal storage tank near well; concrete rectangular trough in corral; both in fair shape but dry
58	Old Bar I-L House Well	T. 17 N., R. 15 W., sec. 19, Lot 2, SW¼NW¼ (Creamery Canyon)	0051	well	Well once equipped with windmill, not in use; 8-inch diameter steel casing near line cabin; water level of 63 feet on 6-25-97
59	Bar I-L Well	T. 17 N., R. 15 W., sec. 19, Lot 1, NW¼NW¼ (Creamery Canyon)	0051	well	Well drilled in 1953; once equipped with windmill, now served by submersible pump with portable generator; pipeline to rectangular trough in corral in NE¼NW¼, sec. 19 and storage tank and trough near the house in the SW¼NW¼, sec. 19; pipeline also serves tank/trough in sec. 23, T. 17 N., R. 16 W.; all tanks and troughs in good condition, holding water 6-25-97
60	Pilgrim Wash Well	T. 17 N., R. 14 W., sec. 1, NW¼NW¼ (Pilgrim Wash)	0083	well	Well drilled in 1950; 6-inch diameter steel casing with windmill; water level reported at 20 feet; circular concrete storage tank and round metal trough in good shape and full of water on 7-23-97
61	Upper Beecher Well	T. 16 N., R. 15 W., sec. 33, NW¼NW¼ (Beecher Canyon)	0051	well	Hand-dug concrete-lined well (3.[illegible] x 4.3 feet); water level of 8.2 feet on 6-10-97; no longer equipped with windmill; pipeline broken; two concrete tanks in fair shape; metal trough in poor shape

62	Test Well	T. 14 N., R. 17 W., sec. 1, (Dutch Flat SW)	0051	well	Monitoring well drilled in 1985 to 1,100 feet; water level was reported at 900 feet; field check on 6-11-97 found no sign of well

[1] Grazing allotment
0008 – Big Sandy
0021 – Chicken Springs
0025 – Crossman Peak
0028 – Diamond Joe
0040 – Happy Jack Wash
0050 – Hibernia A
0051 – La Cienega
0083 – Hibernia B

[2] Type of water source
P – stockpond
DS – developed spring
US – undeveloped spring
CS – cave system
WH – waterhole

Surface water rights of the selected/public lands

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
38-17455	Unnamed reservoir (BLM)	T. 16 N., R. 17 W., sec. 16, SW¼NE¼ (Buck Mountains NE)	5.6	S,W	0051
38-17851 *	Marshall Tank (BLM)	T. 25 N., R. 15 W., sec. 8, SE¼SE¼ (Music Mountains SW)	3.5	S,W	0019

[1] Use
S,W = Stockwatering and wildlife

* This surface water filing would be retained by the BLM under the equal appraised value alternative

[2] Grazing allotment
0019 = Cedar Canyon
0051 = La Cienega

Surface water rights/well permits of the offered/private lands

36-28641	Hibernia Spring (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 5, SW¼NE¼ (Wabayuma Peak)	25	S	0051
36-28642	Black Willow Spring (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 27, NW¼NW¼ (Diamond Joe Peak)	25	S	0008
36-28643	Cottonwood (aka N. Creamery Canyon) Spring (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 31, SW¼SW¼ (Creamery Canyon)	25	S	0051
36-28644	Round Valley Spring (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 33, SW¼SW¼ (Creamery Canyon)	25	S	0051
36-28645	Haystack Draw (Santa Fe Pacific Railroad)	T. 17 N., R. 16 W., sec. 27, SW¼NW¼ (Creamery Canyon)	25	S	0051
36-28647	Dutch Flat Draw (Santa Fe Pacific Railroad)	T. 14 N., R. 17 W., sec. 15, SW¼NE¼ (Buck Mountains SE)	25	S	0051
36-28649	Unnamed (aka Lower Cow Creek) spring (Santa Fe Pacific Railroad)	T. 16.5 N., R. 16 W., sec. 35, SE¼SE¼ (Creamery Canyon)	25	S	0051
36-28650	Unnamed (aka Banded Rock) spring (Santa Fe Pacific Railroad)	T. 16.5 N., R. 16 W., sec. 25, SW¼SW¼ (Creamery Canyon)	25	S	0051
36-28651	Unnamed (aka Round Valley) spring (Santa Fe Pacific Railroad)	T. 16.5 N., R. 16 W., sec. 23, NW¼NW¼ (Creamery Canyon)	25	S	0051
36-28652	Thimble Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 35, SE¼SW¼ (Hibernia Peak)	10	S	0050
36-28656	Pine Flat Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 7, NE¼SE¼ (Wabayuma Peak)	10	S	0050
36-28657	Mountain Side Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 11, NW¼NE¼ (Hibernia Peak)	10	S	0050
36-28658	Upper Bull Canyon Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 17, SW¼NW¼ (Wabayuma Peak)	10	S	0050
36-28659	Blue Tank Spring (Santa Fe Pacific Railroad)	T. 19 N., R. 14 W., sec. 31, SW¼NW¼ (Hibernia Peak)	10	S	0083

36-28660	Bull Canyon (aka Mid Bull Canyon) Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 11, SW¼SW¼ (Hibernia Peak)	10	S	0050
36-28661	Upper Pilgrim Spring (Santa Fe Pacific Railroad)	T. 17 N., R. 14 W., sec. 6, SE¼SE¼ (Hibernia Peak)	10	S	0050
36-28663	Hawk Nest Spring (Santa Fe Pacific Railroad)	T. 18 N., R. 14 W., sec. 7, NW¼NE¼ (Hibernia Peak)	10	S	0050
36-28667	Graveyard Wash (Santa Fe Pacific Railroad)	T. 14 N., R. 14 W., sec. 21, SW¼SE¼ (Groom Spring)	10	S	0021
36-65735	Dead Horse Canyon (Byner Cattle Company)	T. 17 N., R. 14 W., sec. 3, NW¼SW¼ (Hibernia Peak)	1.12	S	0028
36-66261	Right Hand Canyon (Byner Cattle Company)	T. 16.5 N., R. 15 W., sec. 33, NE¼NW¼ (Diamond Joe Peak)	0.28	S	0008
36-66262	Big Johnnie Spring (Byner Cattle Company)	T. 16.5 N., R. 15 W., sec. 33, SE¼NE¼ (Diamond Joe Peak)	0.28	S	0008
38-28670	Haystack Tank (Santa Fe Pacific Railroad)	T. 17 N., R. 16 W., sec. 27, SW¼NW¼ (Creamery Canyon)	0.9	S	0051
38-28672	Lower Tank (Santa Fe Pacific Railroad)	T. 14 N., R. 17 W., sec. 15, SW¼NE¼ (Buck Mountains SE)	2	S	0051
38-28677	Coyote Tank (Santa Fe Pacific Railroad)	T. 14 N., R. 14 W., sec. 21, SW¼SE¼ (Groom Spring)	2	S	0021
55-512981	Test Well (Santa Fe Minerals)	T. 14 N., R. 17 W., sec. 1, (Dutch Flat SW)	NA	E	0051
55-533577	Bill's Well (Anita Waite)	T. 19 N., R. 14 W., sec. 19, NW¼SE¼ (Dean Peak)	NA	S	0083
55-611817	Pilgrim Wash Well (Santa Fe Pacific Railroad)	T. 17 N., R. 14 W., sec. 1, NW¼NW¼ (Pilgrim Wash)	NA	S	0083
55-611820	Bar I-L Well (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 19, NE¼NW¼ (Creamery Canyon)	NA	S	0051
55-611822	Upper Beecher Well (Santa Fe Pacific Railroad)	T. 16 N., R. 15 W., sec. 33, NW¼NW¼ (Beecher Canyon)	NA	S	0051
55-611826	Stock Well (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 15, (Diamond Joe Peak)	NA	S	0051
55-611829	Round Valley Well (Santa Fe Pacific Railroad)	T. 17 N., R. 15 W., sec. 33, (Creamery Canyon)	NA	S	0051
55-633186	Domestic Well (Mark Hannawi)	T. 17 N., R. 15 W., sec. 15, (Diamond Joe Peak)	NA	D	0051
55-633187	Irrigation Well (Daniel Wallin)	T. 17 N., R. 15 W., sec. 15, (Diamond Joe Peak)	NA	I	0051

55-633189	Domestic/Stock Well (Daniel Wallin)	T. 17 N., R. 15 W., sec. 15, (Diamond Joe Peak)	NA	D,S	0051
55-645692	Hawk Nest Well (Santa Fe Pacific Railroad)	T. 18 N., R. 14 W., sec. 7, NW¼NE¼ (Hibernia Peak)	NA	S	0050
55-645725	Mid Bull Canyon Well (Santa Fe Pacific Railroad)	T. 18 N., R. 15 W., sec. 11, SW¼SW¼ (Hibernia Peak)	NA	S	0050

[1] Use
S = stockwatering
E = exploration/geotechnical
D = domestic
I = irrigation

[2] Grazing allotment
0008 = Big Sandy
0021 = Chicken Springs
0028 = Diamond Joe
0043 = Happy Jack Wash
0050 = Hibernia "A"
0051 = La Cienega
0083 = Hibernia "B"

NOTE: Only those water rights/well permits held by Santa Fe Pacific Railroad would be transferred to the BLM as part of the exchange

Appendix G

Description of habitat types

Habitat classifications are based on Brown, 1994; Hall, 1979; Jones, 1981; Peck, 1979 and NRCS, 1996. The following are brief descriptions of habitats in the project area. For more detailed habitat accounts, see Brown, 1994; Hall, 1979; Jones, 1981; and Peck, 1979.

Ponderosa pine-Gambel oak -- This habitat, characterized by an overstory of ponderosa pine with scattered Gambel oak trees, occurs at elevations from 6,500 to 7,500 feet. Precipitation ranges from 17 to 20 inches per year. There are 3,653 acres of mapped habitat in the project area. Of this, there are 330 acres of offered/private lands and no selected/public lands (Map 6).

Arizona interior chaparral -- This habitat is characterized by a mixed evergreen shrub community dominated by turbinella oak, point-leaf manzanita and silk tassel bush. Cover ranges between 40 and 70 percent. The community, found within the 4,000- to 6,000-foot range in the project area, receives between 13 and 17 inches of precipitation annually (Lowe 1964). Of the 123,536 acres of mapped habitat, there are 24,904 acres of offered/private lands and no selected/public lands (Map 6).

Juniper-mixed shrub -- This plant community, characterized by a great variety of plant species, always possesses California juniper as the dominant overstory component. Bigelow's beargrass, rayless goldenhead and flat-top buckwheat occur commonly as understory plants within this community. Elevations range between 3,500 and 5,500 feet with 10 to 13 inches of annual precipitation. There are 9,251 acres of mapped habitat in the area adjacent to the project area (Map 6). None of the selected/public or offered/private lands fall within this plant community.

Crucifixion thorn-mixed shrub -- This community is characterized by crucifixion thorn mixed with a great variety of shrubs. It occurs on hillsides and slopes, often mixing with chaparral species at the upper limits of the desert. It occurs at elevations ranging from 3,000 to 4,000 feet where precipitation ranges between nine and 12 inches annually. There are 31,754 acres of mapped habitat in the project area (Map 6). Of this, there are 1,817 acres of offered/private lands and no selected/public lands.

Joshua tree-juniper -- Because of the varied contacts made with other biomes, Joshua trees may be in co-dominance with California juniper. These two aspect plants occur together in the project area near the upper elevation limits of the Mohave and Sonoran deserts. The elevations range between 2,400 feet to 5,400 feet. Annual precipitation ranges from 9 to 12 inches. There are 59,446 acres of mapped habitat in the project area (Map 6). Of this, there are 9,111 acres of offered/private lands and 7,004 acres of selected/public lands.

Paloverde-mixed cacti -- This community is characterized by areas of granitic boulder hills with a mixture of saguaro cacti and foothill paloverde trees. Also combined under this heading are areas of gently rolling hills without boulders where foothill paloverde is dominant but saguaro is absent. This community occurs at elevations ranging from 1,700 to 3,900 feet with precipitation ranging from six to 12 inches annually. Of the 157,692 acres of mapped habitat in the project area, 21,374 acres are offered/private lands and 1,446 acres are selected/public lands (Map 6).

Joshua tree-mixed shrub -- Joshua trees and creosote are the main aspect plants in this community. There is a greater diversity and abundance of shrubs, grasses and forbs occurring at the higher elevations of this community than at the lower areas. It occurs at elevations ranging between 2,000 and 3,700 feet. Annual precipitation ranges between six and 12 inches. Of the 184,320 acres of mapped habitat in the project area, 11,370 acres are offered/private lands and 31,111 acres are selected/public lands (Map 6).

Creosote-white bursage -- This community is characterized by widely spaced creosote and white bursage shrubs on areas of low relief. Elevation ranges from 1,500 to 2,000 feet. Annual precipitation ranges from three to six inches. Of the 70,209 acres of mapped habitat in the project area, 5,705 acres are offered/private lands and 18,109 acres are selected/public lands (Map 6).

Semi-desert grasslands -- The grasslands within the project area are characterized by widely spaced clumps of galleta grass, banana yucca, buckhorn cholla, snakeweed and catclaw. Elevations range between 3,200 and 4,000 feet with annual precipitation of nine to 12 inches. All of the 10,020 acres of mapped habitat in the project area is selected/public lands (Map 2).

Riparian scrub -- This community can be divided into two distinct plant communities: riparian and xeroriparian. These habitats are linear, small and occur across the landscape and through all plant communities of the project area (Map 6). Vegetation within the riparian/xeroriparian zones, although similar throughout, changes in plant density and diversity with changes in slope, aspect and elevation. All of the mapped riparian scrub within the project area is classified as xeroriparian. Of the 26,248 acres of mapped xeroriparian habitat in the project area, 1,328 acres are offered/private lands and 1,926 acres are selected/public lands. There are approximately 10.7 miles of riparian habitat within the offered/private lands in the project area. Because they occur in narrow canyon situations, they were not large enough to be mapped utilizing the base soil information. The riparian areas are Bull Canyon (4.9 miles), Hibernia Canyon (4.6 miles), Beecher Canyon (0.77 miles), Cow Creek (0.47 miles) and Pilgrim Wash (0.01 miles).

Riparian is described as "*an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and stream banks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil*" (BLM 1990).

Xeroriparian is plant communities in dry or ephemeral washes which support plants that are not dependent on free water in the soil, but nonetheless support a plant community different from that of adjacent uplands. These communities typically support a greater diversity and abundance of plants than the surrounding uplands due to greater water availability within the soil than the surrounding upland's soils exhibit.

Appendix H

Reservations, terms and conditions on certain selected/public lands

Excepting and reserving to the U.S., Gila and Salt River Meridian, Arizona

1. A right-of-way thereon for ditches or canals constructed by the authority of the United States (Act of August 30, 1890 [43 U.S.C. 945])

2. A right-of-way of the Arizona State Highway for a highway, effective August 21, 1950, under Section 17 of the Act of November 9, 1921 (23 U.S.C. 18), as to SE¼, sec. 24, T. 17 N., R. 18 W., (AZAR 263)

3. A right-of-way of the Department of Energy Western Area Power Administration for a powerline, effective August 6, 1993, under the Act of October 21, 1976, (43 U.S.C. 1761) as to E½, sec. 18, T. 24 N., R. 14 W. (AZA 12037)

4. A right-of-way for a road to the Bureau of Land Management, Arizona State Office as reserved under right-of-way AZA 1573 pursuant to the Act of January 13, 1906 as to E½SE¼SW¼, sec. 6, NE¼NE¼, NE¼SE¼NE¼, sec. 18, SW¼SW¼NE¼, E½NW¼, NW¼SE¼, SE¼SE¼, sec. 20, SW¼SW¼NW¼, NE¼SW¼SW¼, NW¼SW¼, W½SE¼SW¼, sec. 28, T. 15 N., R. 17 W. and the right to enforce all or any of the terms and conditions of the right-of-way, including the right to renew or extend it upon its termination (44LD513)

5. A right-of-way of the Federal Highway Administration for a material site, effective August 21, 1996, under the Act of August 27, 1958, (23 U.S.C. 317), as to lots 1 through 6, 9 and 10, W½NE¼, sec. 30, T. 18 N., R. 17 W. (AZA 29628)

6. A right-of-way of the Arizona State Highway for a highway, effective November 8, 1963, under the Act of August 27, 1958, (23 U.S.C. 317), as to N½, sec. 36, T. 18 N., R. 18 W. (AZAR 32972)

7. A right-of-way of the Arizona State Highway for a highway, effective October 14, 1965, under the Act of August 27, 1958, (23 U.S.C. 317), as to E½W½E½, sec. 24, T. 17 N., R. 18 W. (AZAR 35253)

8. A right-of-way of the Department of Energy Western Area Power Administration for a transmission line, effective May 4, 1966, under the provisions of Subsection P, Section 4 of the Act of December 5, 1924, (43 Stat. 704; 43 U.S.C. 417), as to W½NE¼, N½SE¼, SE¼SE¼, sec. 18, T. 24 N., R. 14 W. (AZAR 35584)

9. A right-of-way of the Arizona State Highway for a highway, effective November 17, 1949, under Section 17 of the Act of November 9, 1921 (23 U.S.C. 18), as to W½, sec. 36, T. 18 N., R. 18 W. (AZPHX 85838)

10. A right-of-way of the Arizona State Highway for a highway, effective November 15, 1949, under Section 17 of the Act of November 9, 1921 (23 U.S.C. 18), as to W½E½, sec. 24, T. 17 N., R. 18 W. (AZPHX 85884)

Subject to:

1. Those rights for a road granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZAR 449, pursuant to the Act of February 25, 1920, as amended (30 U.S.C. 185), as to lot 4, SW¼NW¼, sec. 22, W½, sec. 28, T. 16½ N., R. 18 W., lots 1, 9 through 12, 18 and 19, NW¼NE¼, sec. 30, T. 17 N., R. 17 W. and E½, sec. 20, T. 18 N., R. 17 W.

2. Those rights for a pipeline granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZAR 4006, pursuant to the Act of February 25, 1920, as amended (30 U.S.C. 185), as to lots 4 and 5, sec. 22, E½NW¼, SW¼NW¼, sec. 28, T. 16½ N., R. 18 W., lots 1, 9 through 12, 18 and 19, NW¼NE¼, sec. 30, T. 17 N., R. 17 W. and E½NE¼, SW¼NE¼, W½SE¼, sec. 20, T. 18 N., R. 17 W.

3. Those rights for a transmission distribution line granted to Citizen Utilities Company, its successors or assigns, by right-of-way AZA 6839, pursuant to the Act of March 4, 1911, as amended (43 U.S.C. 185), as to lot 2, W½SE¼, sec. 22, T. 16½ N., R. 18 W.

4. Those rights for a telephone line granted to Citizen Utilities Rural Company, its successors or assigns, by right-of-way AZA 7475, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to W½E½, sec. 24, T. 17 N., R., 18 W. and W½W½, sec. 36, T. 18 N., R. 18 W.

5. Those rights for a pipeline granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZAR 12967, pursuant to the Act of February 25, 1920, as amended (30 U.S.C. 185), as to lot 4, SW¼NW¼, sec. 22, E½NW¼, SW¼NW¼, NW¼SW¼, sec. 28, T. 16½ N., R. 18 W., lots 1, 9, 10, 12, 18 and 19, NW¼NE¼, sec. 30, T. 17 N., R. 17 W., E½NE¼, SW¼NE¼, W½SE¼, sec. 20, T. 18 N., R. 17 W.

6. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by right-of-way AZA 17494, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to lot 1, E½E½SE¼, sec. 24, W½W½W½NW¼, sec. 36, T. 16½ N., R. 18 W.

7. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by right-of-way AZA 17928, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to W½NW¼NW¼, W½SW¼NW¼, W½W½SW¼, sec. 28, T. 16½ N., R. 18 W.

8. Those rights for power transmission lines granted to Citizen Utilities Company, its successors or assigns, by rights-of-way AZA 18949, AZA 20228 and AZA 20237, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to lots 5, 17 and 18 and E½ of lot 20, sec. 30, T. 17 N., R. 17 W.

9. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by rights-of-way AZA 20913 and AZA 24710, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to SE¼SE¼SE¼SE¼, sec. 18, NE¼NE¼NE¼NE¼, E½W½, sec. 30, T. 24 N., R. 14 W. and NW¼, NE¼SW¼, SE¼, sec. 12, T. 24 N., R. 15 W.

10. Those rights for a natural gas pipeline granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZA 24993, pursuant to the Act of February 25, 1920, as amended (30 U.S.C. 185), as to lot 4, SW¼NW¼, sec. 22, NW¼NE¼, NE¼NW¼, S½NW¼, NW¼SW¼, sec. 28, T. 16½ N., R. 18 W., lots 1, 9 through 12, 18 and 19, NW¼NE¼, sec. 30, T. 17 N., R. 17 W. and E½, sec. 20, T. 18 N., R. 17 W.

11. Those rights for an access road granted to Xmas Hills Ltd., its successors or assigns, by right-of-way AZA 25087, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to SE¼SE¼SE¼SE¼, sec. 22, T. 16½ N., R., 18 W.

12. Those rights for county road purposes of the Mohave County Board of Supervisors or assigns, as to (AZA 25272) the north 25 feet, sec. 4, T. 24 N., R. 15 W., west and east 25 feet, sec. 6, west, south and east 25 feet, sec. 8, north, west, south and east 25 feet, sec. 18, T. 25 N., R. 15 W., east 25 feet, sec. 2, east 25 feet, sec. 12, T. 25 N., R. 16 W. and west and east 25 feet, sec. 36, T. 26 N., R. 16 W. Rev. Stat. 2477 (43 U.S.C. 932)

13. Those rights for county road purposes of the Mohave County Board of Supervisors or assigns, as to (AZA 26187) NE¼, sec. 18, NE¼, sec. 20, NE¼NE¼, sec. 28, NE¼, sec, 34, T. 15 N., R. 15 W., lots 1 and 2, SE¼SE¼, sec. 2, NE¼, sec, 12, T. 15 N., R. 16 W., SW¼SW¼, sec. 16, T. 16 N., R. 16 W., lot 4, S½, sec. 22, NW¼, NE¼SW¼, SE¼, sec. 26, N½, E½SE¼, sec. 36, T. 16 ½ N., R. 17 W. and NW¼, NE¼SW¼, SE¼, sec. 20, N½, NE¼SE¼, sec. 28, NE¼, sec. 34, T. 17 N., R. 17 W. Rev. Stat. 2477 (43 U.S.C. 932)

14. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by right-of-way AZA 26187A, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to part of the NW¼NW¼NW¼NW¼, sec. 20, T. 17 N., R. 17 W.

15. Those rights for a fiber optic line granted to Electric Lightwave, its successors or assigns, by right-of-way AZA 27844, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to lots 4 and 5, SE¼NW¼, NE¼SW¼, W½SE¼, SE¼SE¼,

sec. 6, SW¼NW¼, E½SW¼, NW¼SW¼, SW¼SE¼, sec. 8, W½SW¼, SE¼SW¼, sec. 16, SW¼SW¼, sec. 22 and NE¼NE¼, sec. 34, T. 15 N., R. 17 W., E½NE¼, sec. 16, T. 16 N., R. 18 W., W½E½, sec. 24, T. 17 N., R. 18 W. and W½W½, sec. 36, T. 18 N., R. 18 W.

16. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by right-of-way AZA 28284, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to N½N½NW¼, sec. 30, T. 24 N., R. 14 W. and SW¼SW¼SW¼SW¼, SE¼SE¼SE¼SE¼, sec. 4, NE¼NE¼NE¼NE¼, sec. 8, NE¼NE¼NE¼NE¼, NW¼NW¼NW¼NW¼, SW¼SW¼SW¼SW¼, SE¼SE¼SE¼SE¼, sec. 10, NW¼NW¼NW¼NW¼, sec. 12, NW¼NW¼NW¼NW¼, sec. 14, SE¼SE¼SE¼SE¼, sec. 26, T. 24 N., R. 15 W.

17. Those rights for a power transmission line granted to Citizen Utilities Company, its successors or assigns, by right-of-way AZA 28323, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to NW¼, NE¼SW¼, W½SE½, sec. 6, SW¼NW¼, SW¼, sec. 8, SW¼, sec. 16, SW¼SW¼SW¼, sec. 22, NE¼NE¼NE¼, sec. 34, T. 15 N., R. 17 W. and NE¼NE¼, sec. 16, T. 16 N., R. 18 W.

18. Those rights for a road granted to the Mohave County Board of Supervisors, its successors or assigns, by right-of-way AZA 28506, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to south 42 feet, sec. 28, south 42 feet of the east 5,000 feet, sec. 30, north 42 feet, sec. 32 and north 42 feet, sec. 34, T. 17 N., R. 17 W.

19. Those rights for a road granted to Thomas R. Reingruber, its successors or assigns, by right-of-way AZA 28778, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to lots 1 and 4, sec. 6, T. 25 N., R. 15 W., lots 1 and 4, sec. 2, T. 25 N., R. 16 W.

20. Those rights for a natural gas pipeline granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZA 28801 (pending), pursuant to the Act of Februsry 25, 1920, as amended (30 U.S.C. 185), as to lots 4 and 5, SE¼NW¼, NE¼SW¼, W½SE¼, sec. 6, SW¼NW¼, N½SW¼, SE¼SW¼, SW¼SE¼, sec. 8, W½SW¼, SE¼SW¼,, sec. 16, SW¼SW¼, sec. 22 and NE¼NE¼, sec. 34, T. 15 N., R. 17 W. and E½NE¼, sec. 16, T. 16 N., R. 18 W.

21. Those rights for a road granted to Equity Capital Inc., its successors or assigns, by right-of-way AZA 28923, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to W½W½NW¼, sec. 36, T. 18 N., R. 18 W.

22. Those rights for a powerline granted to Citizen Utilities Company, its successors or assigns, by right-of-way AZA 29114, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to E½NE¼NE¼, sec. 24, T. 17 N., R. 18 W.

23. Those rights for a telephone cable granted to Citizen Utilities Rural Company, its successors or assigns, by right-of-way AZA 29521, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to E½NE¼NE¼, sec. 24, T. 17 N., R., 18 W.

24. Those rights for a transmission line granted to Citizen Utilities Company, its successors or assigns, by right-of-way AZAR 34052, pursuant to the Act of March 4, 1911, as amended (43 U.S.C. 185), as to W½W½, sec. 36, T. 18 N., R. 18 W.

25. Those rights for a powerline granted to Citizen Utilities Company, its successors or assigns, by right-of-way AZPHX 34352, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to W½E½, sec. 24, T. 17 N., R. 18 W.

26. Those rights for a natural gas pipeline granted to El Paso Natural Gas Company, its successors or assigns, by right-of-way AZPHX 86056, pursuant to the Act of February 25, 1920, as amended (30 U.S.C. 185), as to lots 4 and 5, SE¼NW¼, NE¼SW¼, W½SE¼, sec. 6, SW¼NW¼, N½SW¼, E½SW¼, SW¼SE¼, sec. 8, W½SW¼, SE¼SW¼, sec. 16, SW¼SW¼, sec. 22, NE¼NE¼, sec. 34, T. 15 N., R. 17 W. and E½NE¼, sec. 16, T. 16 N., R. 18 W.

27. Those rights for corner crossings and road segments granted to Legend Land L.L.C., its successors or assigns, by right-of-way AZA 30290, pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as within T. 14 N., R. 17 W., T. 15 N., R. 15 W., T. 15 N., R. 16 W., T. 15 N., R. 17 W., T. 16 N., R .16 W., T. 16 N., R. 17 W. and T. 16½ N., R. 17 W.

28. Those rights for a buried telephone cable granted to Citizens Utilities Rural Company, its successors or assigns, by right-of-way AZA-30746,

pursuant to the Act of October 21, 1976 (43 U.S.C. 1761) as to NE¼NE¼NE¼NE¼, sec. 24, E½W½, sec. 30 T. 24 N., R. 14 W.

The land herein described as lots 1 through 4, inclusive, S½N½, S½, sec. 2, T. 25 N., R. 16 W. is subject to a reservation of all minerals as appear on record in Deed of Reconveyance dated December 7, 1946 and recorded in Book 54 of Deeds, pages 355 and 356, of the Official Records of Mohave County, Arizona.

The land herein described as sec. 36, T. 26 N., R. 16 W. is subject to a reservation of all minerals as appear on record in Deed of Reconveyance dated May 2, 1939, and recorded in Book 53 of Deeds, pages 255 and 256, of the Official Records of Mohave County, Arizona.

The land herein described as sec. 16, T. 15 N., R. 17 W. is subject to a reservation of all minerals deposits and rights, together with the right to prospect for, mine and remove the same, as appear on record, in Deed of Reconveyance dated March 2, 1939, recorded in Book 53 of Deeds, page 238 of the Official Records of Mohave County, Arizona.

The land herein described as sec. 32, T. 16½ N., R. 17 W. and W½, NE¼, W½SE¼, NE¼SE¼, sec. 36, T. 16½ N., R. 18 W. is subject to a reservation of all minerals deposits and rights, together with the right to prospect for, mine and remove the same, as appear on record, in Deed of Reconveyance dated December 7, 1940 and recorded in Book 54 of Deeds, pages 350 and 351 of the Official Records of Mohave County.

The land herein described as sec. 32, T. 17 N., R. 17 W. is subject to a reservation of all minerals deposits and rights, together with the right to prospect for, mine and remove the same, as appear on record, in Deed of Reconveyance dated December 7, 1940, recorded in Book 54 of Deeds, pages 351 and 352 of the Official Records of Mohave County, Arizona.

Calculation of habitat units

Habitat unit table development

Habitat units were used as an objective unit of measure to compare the alternatives for each species selected for evaluation. Generally, the more habitat units, the better the alternative is for the evaluated species. Habitat units were calculated by multiplying the habitat value and the acreage of that habitat. Habitat units were then adjusted according to ownership pattern (BLM 1997).

Habitat value

Habitat value (HV) was developed for each of the selected species, based on a scale of 0 to 1.0. Habitats were ranked based on apparent value to the evaluated species (optimal habitat ranks 1.0). These scales were developed on a best-case scenario from the perspective of long-term species viability and conservation. Consequently, habitat value scales were developed using solid public land ownership, where federal land managers are mandated to manage public lands for multiple use which includes wildlife conservation (BLM 1997).

Ownership pattern

For the proposed action, the lands within the project area would go into blocked ownership ("Public land -- blocked" and "Private land -- blocked"). For the no action alternative, the lands within the project area would remain in a checkerboard or mixed ownership pattern ("Public land -- checkerboard" and "Private land -- checkerboard").

Prior to final calculation of habitat units, consideration of the resulting land ownership pattern from implementing each alternative and potential impacts to each of the selected species was evaluated. For each species, habitat value scales were developed for solid public land ownership. Because of both the potential for real estate development and the reduced capability for conservation management on nonfederal lands (see previous section on land ownership patterns), solid private and checkerboard land ownership patterns resulting from the alternatives were assigned reduced habitat unit values based on reduction of available habitat, increase in human interactions and disturbance and adaptability of the selected species being evaluated.

Abbreviations used in the tables

Chap -- Arizona interior chaparral
CreoBur -- Creosote-white bursage
CruxMix -- Crucifixion thorn-mixed shrub
DGrass -- Semi-desert grassland

JoshMix -- Joshua tree-mixed shrub
JoshJun -- Joshua tree-juniper
PaloCac -- Paloverde-mixed cacti
PineOak -- Ponderosa pine-Gambel oak

Habitat units for mule deer under the proposed action alternative

Habitat type	CreoBur	DGrass	JoshMix	JoshJun	PaloCac	PinoOak	CruxMix	Chap	Total habitat units
Habitat importance value (HV)	0.2	0.2	0.3	0.6	0.6	0.8	0.85	0.9	
Public lands -- blocked (habitat units)	5,705 acres x 0.2 = 1,141	0	11,370 acres x 0.3 = 3,411	9,111 acres x 0.6 = 5,467	21,374 acres x 0.6 = 12,824	330 acres x 0.8 = 264	1,817 acres x 0.85 = 1,545	24,904 acres x 0.9 = 22,414	47,066
Private lands -- blocked	18,109 acres x 0.2 = 3,622	10,020 acres x 0.2 = 2,004	31,111 acres x 0.3 = 9,333	11,370 acres x 0.6 = 6,822	1,446 acres x 0.6 = 868	0	0	0	(22,649) - (0.75) (22,649)= 5,662
Total habitat units									52,728

Habitat units for mule deer under the no action alternative

Habitat type	CreoBur	DGrass	JoshMix	JoshJun	PaloCac	PinoOak	CruxMix	Chap	Total habitat units
Habitat importance value (HV)	0.2	0.3		0.6	0.6	0.8	0.85	0.9	
Private land checkerboard	5,705 acres x 0.2 = 1,141	0	11,370 acres x 0.3 = 3,411	9,111 acres x 0.6 = 5,467	21,374 acres x 0.6 = 12,824	330 acres x 0.8 = 264	1,817 acres x 0.85 = 1,545	24,904 acres x 0.9 = 22,414	(47,066) - (0.70) (47,066) = 14,120
Public land checkerboard	18,109 acres x 0.2 = 3,622	10,020 acres x 0.2 = 2,004	31,111 acres x 0.3 = 9,333	11,370 acres x 0.6 = 6,822	1,446 acres x 0.6 = 868	0	0	0	(22,649) - (0.60) (22,649) = 9,060
Total habitat units									23,180

Habitat units for Gambel's quail under the proposed action alternative									
Habitat type	CreoBur	DGrass	JoshMix	JoshJun	PaloCac	PineOak	CruxMix	Chap	Total habitat units
Habitat importance value (HV)	0.2	0.3	0.6	0.6	0.7	0.1	0.8	0.3	
5,705 acres x 0.2 = 1,141		0	11,370 acres x 0.6 = 6,822	9,111 acres x 0.6 = 5,467	21,374 acres x 0.7 = 14,962	330 acres x 0.1 = 33	1,817 acres x 0.8 = 1,454	24,904 acres x 0.3 = 7,471	37,350
Private lands blocked (habitat units)	18,109 acres x 0.2 = 3,622	10,020 acres x 0.3= 3,006	31,111 acres x 0.6 = 18,667	11,370 acres x 0.6 = 682	1,446 acres x 0.7 = 1,012	0	0	0	(26,989) - (0.40) (26,989) =16,193
Total habitat units									53,543

Habitat units for Gambel's quail under the no action alternative									
Habitat type	CreoBur	DGrass	JoshMix	JoshJun	PaloCac	PineOak	CruxMix	Chap	Total habitat units
Habitat importance value (HV)	0.2	0.3	0.6	0.6	0.7	0.1	0.8		
Private lands checkerboard	5,705 acres x 0.2 = 1,141	0	11,370 acres x 0.6 = 6,822	9,111 acres x 0.6 = 5,467	21,374 acres x 0.7 = 14,962	330 acres x 0.1 = 33	1,817 acres x 0.8 = 1,454	24,904 acres x 0.3 = 7,471	37,350 - (0.30) (37,350) = 26,145
Public lands checkerboard	18,109 acres x 0.2 = 3,622	10,020 acres x 0.3 = 3,006	31,111 acres x 0.6 = 18,667	11,370 acres x 0.6 = 682	1,446 acres x 0.7 = 1,012	0	0	0	(26,989) - (0.20) (26,989) = 21,591
Total habitat units									47,736

Habitat units for the Hualapai Mexican vole under the proposed action

Habitat type (habitat importance value)	Ponderosa pine/Gambel oak (HV = 1.0)	Chaparral associated with ponderosa pine/Gambel oak (HV = 0.1)	Total habitat units (no reduced HV; all solid federal ownership)
Blocked private	0	0	0
Blocked public (habitat units)	(330 acres) x (1.0) = 330	(179.2 acres) x (0.1) = 17.92	347.92
Total habitat units			347.92

Habitat units for the Hualapai Mexican vole under the no action alternative

Habitat type (habitat importance value)	Ponderosa pine/Gambel oak (HV = 1.0)	Chaparral associated with ponderosa pine/Gambel oak (HV = 0.1)	Total habitat units (with reduced HV for nonfederal ownership)
Public lands checkerboard	0	0	0
Private lands checkerboard (habitat units)	(330 acres) x (1.0) = 330	(179.2 acres) x (0.1) = 17.92	(347.92) - (0.95) (347.92) = 7.9
Total habitat units			17.4

Habitat units for the Mexican spotted owl under the proposed action

Habitat type (habitat value)	Ponderosa pine/Gambel oak (HV = 0.6)	Chaparral associated with ponderosa pine /Gambel oak (HV = 0.1)	Total habitat units (no reduced HV; all solid federal ownership)
Blocked private lands	0	0	0
Blocked public lands (habitat units)	(330 acres) x (0.6) = 198	(179.2 acres) x (0.1) = 17.92	215.9
Total habitat units			215.9

Habitat units for the Mexican spotted owl under the no action alternative

Habitat type (habitat values)	Ponderosa pine/Gambel oak (HV = 0.6)	Chaparral associated with ponderosa pine /Gambel oak (HV = 0.1)	Total habitat units (with reduced HV for nonfederal ownership)
Public lands checkerboard	0	0	0
Private lands checkerboard	(330 acres) x (0.6) = 330	(179.2 acres) x (0.1) = 17.92	(367.72) - (0.95) (367.72) = 18.4
Total habitat units			18.4

Habitat units for the Sonoran desert tortoise under the proposed action alternative

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Blocked private lands	0	0 *	(58,880) acres x (0.25) = 14,720	14,720
Blocked public lands	(19,840 acres) x (1.00) = 19,840 *		(51,200) acres x (0.25) = 12,800	32,640
Total habitat units				**47,360**

Habitat units for Sonoran Desert tortoise under the no action alternative

Category (habitat importance value)	Category I (1.00)	Category II (0.75)	Category III (0.25)	Total habitat units
Public lands checkerboard habitat units (acres x HV)		(6,400 acres) x (0.75) = 4,800	(52,480 acres) x (0.25) = 13,120	17,920
Private lands checkerboard habitat units (acres x HV)	(640 acres) x (1.00) = 640	(19,200 acres) x (0.75) = 14,400	(51,200 acres) x (0.25) = 12,800	27,840
				45,760

White-margined penstemon

To rate habitat quality, three levels of plant density were used; high-quality (I) habitat contained either large patches of white-margined penstemon or consistent occurrences of scattered plants on sandy loam uplands; medium-quality (II) habitat contained more widely scattered plants on sandy loam uplands and low-quality (III) habitat only contained widely scattered plants.

Habitat units for the white-margined penstemon under the proposed action alternative

Habitat importance value (HV)	I (1.00)	II (0.75)	III (0.25)	Total
Blocked private habitat units (acres x HV)	480 x 1.00 = 480	1,835 x 0.75 = 1,376	1,420 x 0.25 = 355	2,211 - 0.80 (2,211) = 442
Blocked federal habitat units (acres x HV)	980 x 1.00 = 980	60 x 0.75 = 45	0	1,025
Total habitat units				1,467

Habitat units for the white-margined penstemon under the equal appraised value alternative

Habitat importance value (HV)	I (1.00)	II (0.75)	III (0.25)	Total
Blocked private habitat units (acres x HV)	480 x 1.00 = 480	1,735 x 0.75 = 1,301	1,360 x 0.25 = 340	2,121 - 0.80 (2,121) = 424
Blocked federal habitat units (acres x HV)	980 x 1.00 = 980	60 x 0.75 = 45	0	1,025
Total habitat units				1,449

Habitat units for the white-margined penstemon under the no action alternative

Habitat importance value (HV)	I (1.00)	II (0.75)	III (0.25)	Total
Public lands checkerboard habitat units (acres x HV)	480 x 1.00 = 480	1,835 x 0.75 = 1,376	1,420 x 0.25 = 355	2,211 - 0.40 (2,211) = 1,326
Private lands checkerboard habitat units (acres x HV)	980 x 1.00 = 980	60 x 0.75 = 45	0	1,025 - 0.60 (1,025) = 410
Total habitat units				1,736

Appendix J

Proposed action

The following range improvements are on selected/public lands.

Range improvements on the selected/public lands			
Legal description	*Improvement description*	*Improvement number*	*Allotment number*
T. 15 N., R. 15 W., sec. 8	Boundary fence	637	0021 and 0051
T. 15 N., R. 15 W., sec. 16	Pipeline	1121	0021
T. 15 N., R. 15 W., sec. 16	Brush and juniper eradication	1190	0021
T. 15 N., R. 15 W., sec. 18	Cattleguard	704	0051
T. 15 N., R. 15 W., sec. 18	Boundary fence	637	0021 and 0051
T. 15 N., R. 16 W., sec. 8	Pipeline	1514	0051
T. 15 N., R. 16 W., sec. 18	Pipeline	1514	0051
T. 15 N., R. 16 W., sec. 24	Boundary fence	637	0021 and 0051
T. 15 N., R. 16 W., sec. 26	Boundary fence	637	0021 and 0051
T. 15 N., R. 16 W., sec. 28	Boundary fence	637	0021 and 0051
T. 15 N., R. 16 W., sec. 32	Boundary fence	637	0021 and 0051
T. 15 N., R. 17 W., sec. 2	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 4	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 6	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 12	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 18	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 24	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 30	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 32	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 34	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 36	Boundary and pasture fence	218	0051
T. 15 N., R. 17 W., sec. 24	Pipeline	1514	0051
T. 15 N., R. 17 W., sec. 36	Pipeline/storage/trough	1514	0051
T. 16 N., R. 16 W., sec. 32	Pipeline	1514	0051
T. 16 N., R. 17 W., sec. 6	Boundary fence	1507	0051
T. 16 N., R. 17 W., sec. 16	Earth tank	1504	0051

T. 16 N., R. 17 W., sec. 18	Boundary fence	1507	0051
T. 16 N., R. 17 W., sec. 30	Boundary fence	1507	0051
T. 16 N., R. 18 W., sec. 12	Boundary fence	856	0025
T. 16 N., R. 18 W., sec. 14	Boundary fence	856	0025
T. 16 N., R. 18 W., sec. 16	Boundary fence	856	0025
T. 16 N., R. 18 W., sec. 16	Pipeline	2293	0025
T. 16.5 N., R. 17 W., sec. 20	Boundary fence	1507	0051
T. 16.5 N., R. 17 W., sec. 22	Boundary fence	1507	0051
T. 16.5 N., R. 17 W., sec. 26	Pipeline	1510	0051
T. 16.5 N., R. 17 W., sec. 26	Corral/trough	1512	0051
T. 16.5 N., R. 17 W., sec. 30	Boundary fence	1507	0051
T. 16.5 N., R. 18 W., sec. 22	Boundary fence	861	0025
T. 16.5 N., R. 18 W., sec. 24	Boundary fence	861	0025
T. 17 N., R. 17 W., sec. 20	Pipeline	866	0043
T. 18 N., R. 17 W., sec. 30	Trough	4711	0011
T. 18 N., R. 18 W., sec. 36	Boundary fence	466	0043 and 0079
T. 18 N., R. 18 W., sec. 36	Trough	4712	0011
T. 18 N., R. 18 W., sec. 26	Loading chute	permit, no number	0011
T. 24 N., R. 14 W., sec. 18	Pasture fence	5620	0042
T. 24 N., R. 14 W., sec. 30	Pasture fence	5620	0042
T. 24 N., R. 15 W., sec. 4	fence	1197	0077
T. 24 N., R. 15 W., sec. 8	fence	1197	0077
T. 24 N., R. 15 W., sec. 4	Trough	1755	0077
T. 24 N., R. 15 W., sec. 8	Pipeline	1037	0077
T. 24 N., R. 15 W., sec. 26	Pipeline	1037	0077
T. 24 N., R. 15 W., sec. 8	Storage	1761	0077
T. 24 N., R. 15 W., sec. 4	Fence	1575	0077
T. 24 N., R. 15 W., sec. 4	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 10	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 14	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 26	Pipeline	permit, no number	0077

T. 24 N., R. 15 W., sec. 12	Corral/chute	1759	0077
T. 24 N., R. 15 W., sec. 26	Fence	1567	0077
T. 24 N., R. 15 W., sec. 24	Fence	1167	0077
T. 24 N., R. 15 W., sec. 8	Fence	918	0077
T. 24 N., R. 15 W., sec. 10	Fence	918	0077
T. 24 N., R. 15 W., sec. 12	Fence	918	0077
T. 25 N., R. 15 W., sec. 18	Fence	160	0077
T. 25 N., R. 15 W., sec. 8	Fence	165	0019 and 0077
T. 25 N., R. 15 W., sec. 18	Fence	165	0019 and 0077
T. 25 N., R. 15 W., sec. 8	Earth tank	368	0019
T. 25 N., R. 15 W., sec. 6	Fence	171	0019

Equal appraised value

The range improvements on selected/public lands would be the same as those under the proposed action except that the following improvements would not be included.

[illegible]			
T. 16 N., R. 18 W., sec. 16	Boundary fence	856	0021 and 0051
T. 16 N., R. 18 W., sec. 16	Pipeline	2293	0025
T. 18 N., R. 17 W., sec. 30	Trough	4711	0011
T. 18 N., R. 18 W., sec. 36	Boundary fence	466	0043 and 0079
T. 18 N., R. 18 W., sec. 36	Trough	4712	0011
T. 25 N., R. 15 W., sec. 18	Fence	160	0077
T. 25 N., R. 15 W., sec. 8	Fence	165	0019 and 0077
T. 25 N., R. 15 W., sec. 18	Fence	165	0019 and 0077
T. 25 N., R. 15 W., sec. 8	Earth tank	368	0019
T. 25 N., R. 15 W., sec. 6	Fence	171	0019

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END

5-06-99

Private lands checkerboard	(550 acres) x (0.6) = 330	(179.2 acres) x (0.1) = 17.92	(367.72) - (0.95) (367.72) = 18.4
Total habitat units			**18.4**

T. 15 N., R. 17 W., sec. 36	Pipeline/storage/trough	1514	0051
T. 16 N., R. 16 W., sec. 32	Pipeline	1514	0051
T. 16 N., R. 17 W., sec. 6	Boundary fence	1507	0051
T. 16 N., R. 17 W., sec. 16	Earth tank	1504	0051

T. 24 N., R. 15 W., sec. 4	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 10	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 14	Pipeline	permit, no number	0077
T. 24 N., R. 15 W., sec. 26	Pipeline	permit, no number	0077

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